

GRAIN & FEED JOURNALS

CONSOLIDATED

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A Merger of Grain Dealers Journal, American Elevator & Grain Trade, Grain World and Price Current-Grain Reporter

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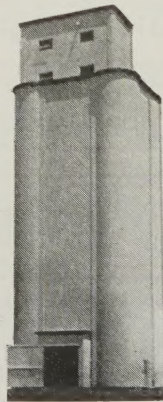
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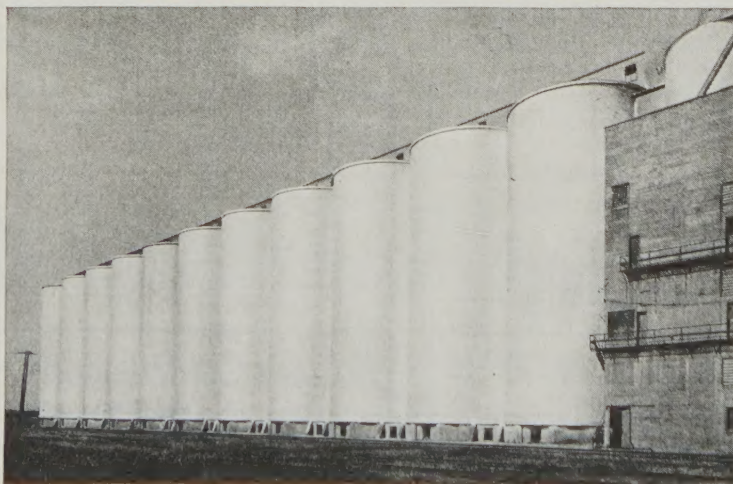
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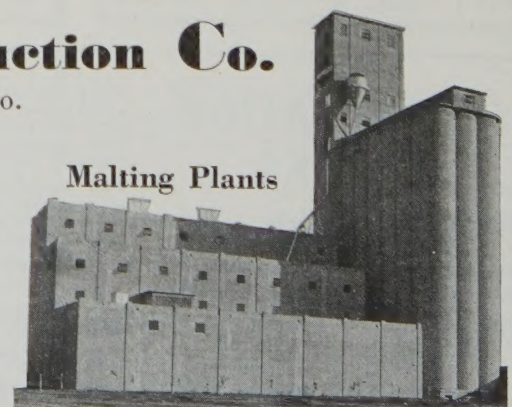
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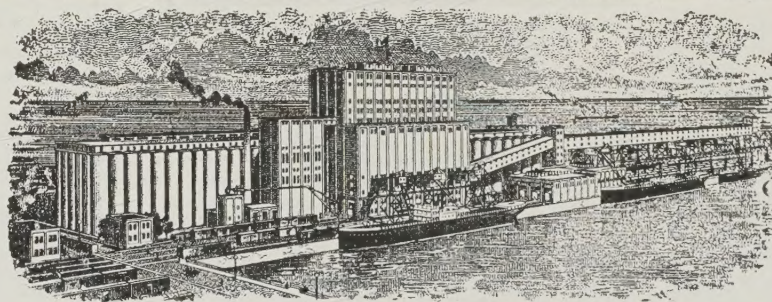
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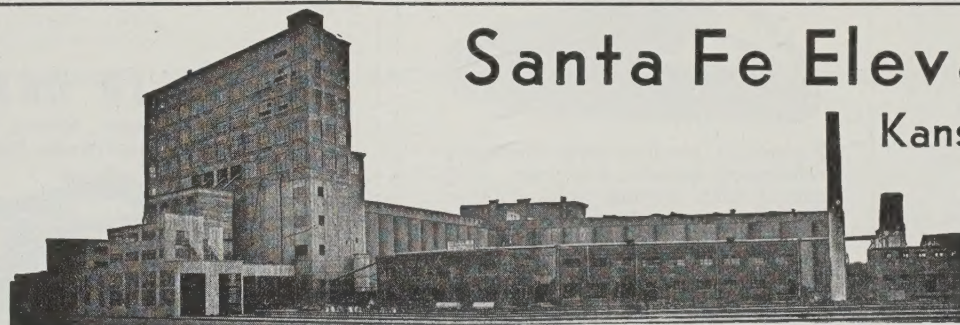
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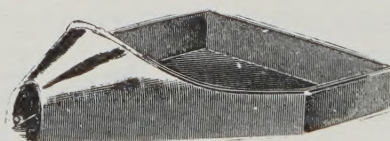
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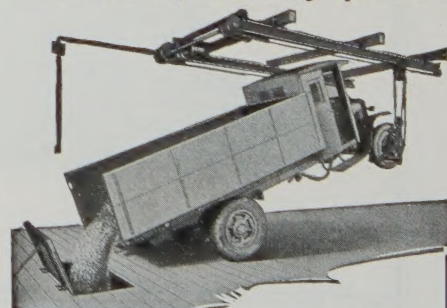
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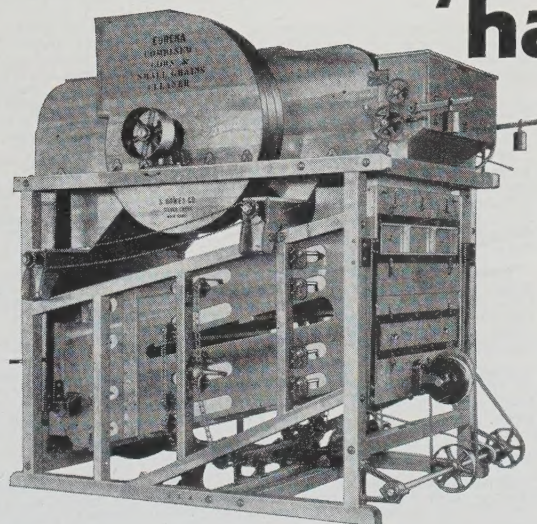
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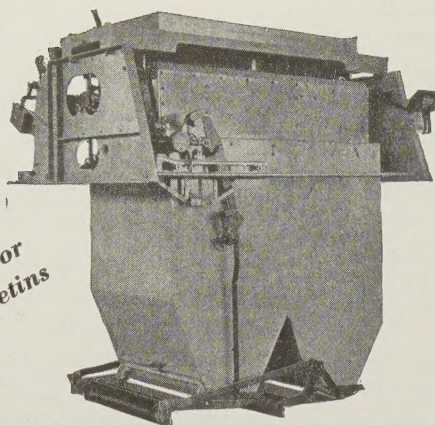
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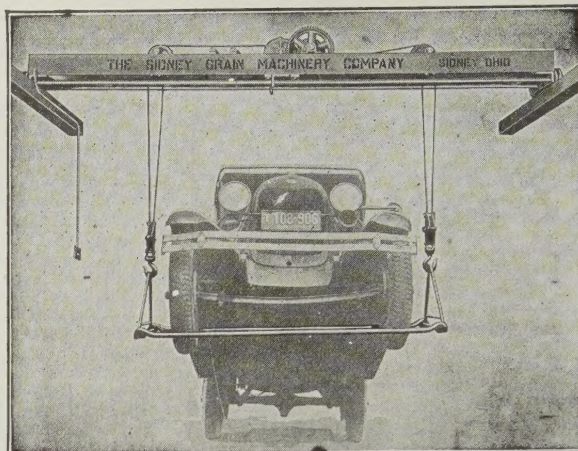
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A merger of
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Established 1928

AMERICAN ELEVATOR & GRAIN TRADE
Established 1882

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Published on the second and fourth Wednesdays of each month in the interests of better business methods for progressive wholesale dealers in grain, feed and field seeds. It is the champion of improved mechanical equipment for facilitating and expediting the handling, grinding and improving of grain, feeds and seeds.

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THE ADVERTISING value of the Grain & Feed Journals Consolidated as a medium for reaching progressive grain, feed and field seed dealers and elevator operators is unquestioned.

Advertisements of meritorious grain elevator and feed grinding machinery and of responsible firms who seek to serve grain, feed and field seed dealers are solicited. We will not knowingly permit our pages to be used by irresponsible firms for advertising a fake or a swindle.

LETTERS on subjects of interest to those engaged in the grain, feed and field seed trades, news items, reports on crops, grain movements, new grain firms, new grain elevators, contemplated improvements, grain receipts, shipments, and cars leaking grain in transit, are always welcome. Let us hear from you.

QUERIES for grain trade information not found in the Journal are invited. The service is free.

CHICAGO, ILL., MARCH 27, 1940.

THE BUILDING of many new soybean processing plants in the middle states is sure to strengthen the market for the new crop.

INCREASED offerings of wheat held off the market by government loans is depressing the market price in a most discouraging manner. The law of supply and demand must rule the market.

SO MUCH farmer-owned grain is under government loan that grain warehousemen cannot afford to pay the tax if the grain happens to be in their elevators when the assessor comes around. In Indiana the State Tax Board tried to place on the elevator operators the burden of proving the grain was not theirs but that of the farmers, until the efficient secretary of the Indiana Grain Dealers Ass'n explained to the Board that the information could be more easily obtained by the county assessors from the A.A.A. com'ites. The tax is payable by the owner of the grain not by the warehouseman, in every state of the Union.

VIGILANT champions of a reduction in bureaucratic regimentation of business are wiring their representatives in both Houses of Congress for permanent relief from unreasonable domination of business now prevailing under the NLR Board.

RAILROAD managements have done much to improve service and attract traffic between the years 1932 and 1939, but politicians have raised the average annual compensation of railroad employes 21 per cent, and taxes 33 per cent, while freight rates have been lowered 6.6 per cent.

DUST EXPLOSIONS in recent years have been accompanied by a reduced loss of life compared with the decade, 1919-1928, a reduction greater than in the number of explosions. The reduction in the amount of property loss also indicated that explosions, while numerous, were not so completely destructive, a tribute to elevator superintendents who have been striving to keep their plants free of dust.

THE DEATH recently of the manager of an Iowa elevator who was driving a heavy tractor up the unguarded approach to the elevator scales again emphasizes the necessity of enclosing all elevated driveways with strong retaining walls so as to prevent wheels of any vehicle slipping off the elevated approach. Elevator operators cannot afford to overlook their own liability for injury to any customer who visits the plant and meets with disaster.

A STUDY by the University of Illinois published elsewhere shows that handling costs in Illinois elevators range from 0.79 cent to 9.01 cents; and that 43 companies earned an average margin of 2.12c. Business ability of the management had far less effect on operating expense per bushel than did the volume handled. As may be surmised by those experienced in the business the high cost per bushel occurred in houses handling less than 100,000 bus. a year.

AGRICULTURALLY minded A.A.A. bureaucrats who are denying the grain warehouseman a fair recompense for storage should consider adoption of a cost-plus plan, based on the fact that houses handling a small amount annually have a heavier cost per bushel. The principle is the same as in wheat production, which A.A.A. men understand. It may cost a New York State farmer \$1.25 per bushel to grow wheat on 40 acres, while the Nebraska farmer can grow 400 acres at 50 cents per bushel. Would the A.A.A. consider it fair to force the New York farmer to sell his wheat at a uniform price of 75 cents per bushel? just because a few elsewhere can do so at a profit. Yet that equals the unfair proposition the C.C.C. is forcing on grain warehousemen.

NOW that the frost is getting out of the ground and changing the foundation of many out door scales, alert grain dealers are cleaning up around all scales and applying for the careful inspection of each scale.

SETTING aside a grand opening day of a new grain elevator or feed mill to acquaint prospective farm patrons with the facilities installed to serve them has long been recognized as most effective advertising, but a few far sighted grain dealers have exhibited pardonable pride in their improvements and set aside a special day to show their new facilities to leading citizens, who are always pleased to learn of any marked improvement in community enterprises.

AT A TIME when a determined effort is being made to amend the wages and hours act an attempt should be made to relieve the administrator of the burden of interpreting the act, so that an ordinary citizen, aided by his lawyer, can read the law and know how to govern himself without running hat in hand to an administrator for permission to do this and do that. Indeed, so doubtful is the administrator he cautions the public that he may subsequently decide that his prior interpretation is incorrect.

REPORTS of the saving of grain elevators from fire by the quick action of alert employees appear frequently in our news columns encouraging observing operators to provide efficient fire extinguishing apparatus at every convenient point and to hold monthly fire drills to acquaint employees with the location and use of the apparatus installed. While this precaution may not always effect a great reduction in the cost of fire insurance it has often saved an elevator from destruction and insured continuous employment for vigilant workers.

LAW MAKING by edict or so-called interpretation of laws enacted has become so popular with the bureaucrats of the land that the Illinois Retailers' Occupational Tax Division of the Department of Finance has now ruled that, effective April 1st, goods shipped into the state to fill an order shall not be exempt from the sales tax if the seller is represented in the state. So long as citizens of any state bow their necks to the regulations or supplementary rulings of the department heads, more unreasonable requirements will be provided for the offending citizens. Some states have now so many new laws and regulations, it is most difficult for even the best posted government officials to obtain a definite understanding of the rights and responsibilities of citizens. Even the heads of departments are puzzled beyond measure by contradictory interpretations of the laws and rulings for their enforcement. The U. S. Constitution gives Congress alone authority to regulate interstate commerce.

CANAL and river transportation maintained at heavy annual cost to the taxpayers serves only the few shippers located on the waterways; and the railroads forced to make low rates by this subsidized competition to stay in business must raise charges to the great number of interior shippers who have no other outlet than the rails.

FEEDS sold in North Dakota will cost feeders in that state 50 cents more per ton by reason of a law that slipped thru the last legislature creating a Poultry Improvement Board and making an assessment of 50 cents per ton, in addition to the license fee of 20c per ton. In the interest of dealers, feeders and manufacturers this assessment should be repealed, as it is excessive and there is no assurance the money so collected will contribute to the improvement of poultry.

CHEERING news came from Washington Mar. 18 that the new administrator of the wage and hour act has ordered his field force to investigate whether the "area of production" should be redefined in the determination of exemption from provisions of the act. Instead of limiting the area by miles why not allow the exemption to all country elevators receiving grain direct from the farm, regardless of distance? The measure of area of production is one of character of service, not one of distance.

THE IRREGULAR practices of some country elevator operators has resulted in the enactment of storage laws designed primarily to protect the owners of grain stored. Michigan is one of the states which has recently added laws of this character to its statutes so that it behooves the elevator operators of that state to familiarize themselves with the requirements of the law. Doubtless some of this legislation is due directly to the elevator operators ignoring the rights of the owners of property stored. However, it will not be long until the requirements of the new legislation will be fully recognized by the elevator operators to the advantage of their customers and themselves.

GROWERS who have sealed grain for government loans are surprised to learn that in case they sell the sealed collateral they are expected to provide for the payment of all fees, costs and expenses incident to insuring the grain account for the proceeds of the sale, and expenses of storing, handling, marketing and delivery, as well as interest. If any deficiency occurs, then the borrower shall be held liable. Farmers who tried to speculate with cheap government money will now begin to add their expenses to the net cost of their loan, while farmers who sold their wheat and invested the money have obtained a definite income from the investment of their own capital and are free from bureaucratic regulations.

COMPILERS of elevator fire statistics of the '90s were amazed at the large number of wood elevators sacrificed to locomotive sparks and lightning. Since then the wood shingles have been displaced by steel roofing and siding and most wood elevators are now protected by standard lightning equipment with the result compilers of elevator fire statistics are now delighted by the absence of two of the most prolific agents of elevator destruction. Insurance premium credits allowed by mutual fire insurance companies for the correction of these two known fire hazards soon defray the entire expense of the improvement, so there is no excuse for any owner who is really interested in the protection of his property to refrain from covering all wood elevators with iron and installing standard lightning equipment.

ONE MOST encouraging feature reflected in the news columns of each number of the Journals is that country dealers are installing scales and legs of larger capacity in hope that they will be able to speed up all handling operations. Forty years ago no farmer objected to waiting several hours to unload his horse drawn wagon, but today all are anxious to dump their big truckload and get back home, so the country elevator operators are forced to speed up and they are glad to do it so they can have more time for office work. The increase in size of grain laden trucks has made obsolete the old-time wagon scale of small capacity and while many have been content to install twenty ton truck scales some are now insisting on having thirty-ton truck scales so that the largest trucks can readily be weighed with accuracy and expedition.

ELEVATOR operators who permit children to use any part of the elevator or the buildings surrounding it as a playhouse are courting trouble. Experience has brought condemnation from the community of elevator men who have permitted children admission to their plants because of most disastrous accidents to the trespassing children. Moving machinery has always proved hazardous even to grownups so naturally the inexperienced child meets with even worse and more accidents in plants where children are admitted. The manlift has been a most alluring trap for many a venturesome child much to the deep regret of the owner, who is always considered the culpable party and the one liable for the resulting injuries. One Illinois fire was traceable direct to an open cob house which neighborhood children had been accustomed to use as a playhouse. In this case the children escaped injury but the elevator was destroyed so when the owner rebuilds he will provide a fire proof cob house that can be locked. A large placard warning "*Children Keep Out*" helps to stop the trespasses.

OLD TIME elevator operators who were dependent upon traps, dogs and ferrets for relief from the millions of rodents which strive to make every country elevator their permanent home, should welcome the opportunity to exterminate these pests through the use of red squill, which can be depended upon to exterminate rats, but is harmless to other animal life.

SHIPPER'S weight cards in 1,360 cars arriving at Superior, Wis., last year showed a shortage of 594,558 pounds; and altho 34,908 cars were received claims for shortage were filed on only 891, the average shortage being 14.44 bus. or 884 lbs. This indicates that most of the shippers do not have weighing facilities at the country station in which they themselves have confidence, and that they are neglecting to make claims for shortage occurring while the grain is in charge of the railroad company. Good scales frequently tested and certified to be correct will give the shipper at any station a coveted record with the railroad claim agent and dispose the agent to allow a claim without litigation. As a legal proposition the railroad company has not a leg on which to stand when the shipper proves how much grain was loaded at point of origin. Destination weights have no standing to defeat a claim on point of origin weight. Neither is "clear record" recognized by the courts.

Elevators Are Flocking to the Water

A number of grain elevators now being planned or constructed on canal or river banks gives proof positive that grain dealers are out to reduce the cost of transporting their shipments to market.

Elsewhere in this number is the story of many new structures being erected on the Mississippi, the Missouri and the Illinois rivers as well as in the Pacific Northwest. Shippers seem suddenly to have come to a realization that speed in delivering grain at destination is not so essential to a safe business policy as a definite reduction in the cost of the transportation.

In the days before the Interstate Commerce Commission was established, rail carriers were content to transport grain for any rate that would get them the business, but complying with the rules and regulations of the I.C.C. has deprived the railroad managers of the privilege of quick changes in rates to assure them the coveted business, so shrewd shippers are depending on water and truck transportation to insure them a safe margin on their shipments. Shippers who are anxious to meet competition are arranging their facilities to take prompt advantage of water and truck transportation.

Grain Grading Schools

Progressive grain buyers of different sections of the country have attended recent grain grading schools in large numbers in hope of judging more accurately the quality of future offers of grain. Shippers fully recognize they must sell their grain by the same grading rules; hence, it behooves every buyer to exercise sharp discrimination against the lower grades of grain and beans. Over-grading purchases is sure to net the buyers most discouraging losses.

One most encouraging feature of these grain grading schools is the large attendance of country grain buyers who give close attention to all instruction for determining grades. They realize that the exercise of more accurate judgment in buying is sure to result in safer profits on every crop.

Feed Mill Hazards

Recent experiences in northern feed mills serve to emphasize the urgent need for greater care in protecting all grinding mills from tramp iron and other hard substances. An operator at Bangor, Wisconsin recently was amazed by a large hole burned in the floor under his bagging spout which, of course, was traceable direct to a piece of hot metal which had been ejected from the hammer-mill. Every feed mill operator is anxious to prevent dust explosions or disastrous fires, but it is very evident that greater vigilance must be exercised if the lives of workmen and the owners of property are to be saved from these regrettable experiences.

A dust explosion in a feed grinding elevator at Hutchinson, Minn., resulted in damage to the building that was thought to necessitate its razing and reconstruction. The explosion is credited to sparks caused by metal admitted to the mill. Experienced inspectors who carefully investigate explosions of this character are firmly convinced the number of explosions will increase rapidly unless feed mill operators exercise greater vigilance and keep their protecting safeguards in perfect working condition.

While all the facilities now used for catching tramp iron and removing it may be in perfect working condition they sometimes fail to affect the desired separation. Supplementary magnets and traps could be used in many plants to give better protection, with forbidding expense.

COUNTRY elevator operators who have efficient corn graders will find their installation profitable, if they will let the farmers of their territory know it is possible to control the dropping of expensive hybrid seed in each hill through careful grading. The saving of seed with the improved harvesting results should appeal to the planter.

Will "Certificate Plan" Go On the Rocks?

With federal borrowing approaching dangerously near the constitutional limit it is not surprising the bureaucracy should turn to desperate schemes to raise money with which to continue the federal largesse.

The bureaucracy seems to have learned nothing from the court decision outlawing the processing tax on the ground it was levied for a specific purpose. No judge could be so dense as not to see that the certificate plan is exactly such another tax.

Furthermore, the certificate plan is defective as an unconstitutional delegation of the taxing power of the Congress. Under it the secretary of agriculture would set up his own independent Internal Revenue Buro, would create his own little Treasury Department. He admits, nay, he boasts that the Treasury would have nothing to do with it.

Surely there must be some members of the Senate with sufficient knowledge of law to understand that this subterfuge will never get by the courts, and to refuse to entertain the secretary's suggestions.

Why Does AAA Refuse to Store Grain in Established Elevators?

The prevailing prices for wheat combined with the government's call of its loans on stored wheat has helped to induce holders to pay their loans and sell their wheat so the accumulated surplus of wheat will not exert a depressing influence on values July 1st.

Corn loans on the other hand are rapidly increasing. On February 29 the C.C.C. reported that \$214,994,582 had been advanced on the 360,000,000 bus. of corn then held as collateral. The C.C.C. also holds over 90,000,000 bus. of corn which it owns because borrowers neglected to redeem collateral deposited. The holding of 450,000,000 bus. of corn in the public show windows is not likely to effect an advance in market prices and at the present rate of increase in loans on corn it is likely to swell the total to close to half a billion bushels by March 31st.

If all the corn owned and held as collateral by the C.C.C. were stored in thousands of elevators erected primarily by enterprising merchants for the safe handling and storing of farmers' crops, it would be a much merited recognition of the service which grain merchants have long offered to the grain growers of the land. No one has yet discovered the real reason for the bureaucrats of the A.A.A. refusing to use the superior storage facilities of elevator owners, or why they have willingly paid twice as much to store perfectly good grain in leaking tin cans. If any good reason exists it should be made public.

Winning Customers by Entertainment

Entertainment such as moving picture shows, exhibits of feeds, seeds and other sideline products as well as buffet luncheons is gaining in popularity and influence with farm patrons.

Our news columns in this number report eleven entertainments of this character by country elevator operators. Some employ high pressure salesmen from wholesalers interested in the promotion of sales and these experts help to interest guests in the various products exhibited and to advise them of the proper use of the products offered for sale.

Open day celebrations also afford the elevator operator a splendid opportunity to inform his prospects of his new facilities for serving them. While all of these entertaining and educational features are potent factors in gaining good will, they also find the annual celebration a profitable day for sales.

Iowa dealers seem to be specializing in evening meetings when experts in modern feeding practices address the farmers in an effort to enlighten them on the true advantages of improved feeding methods.

Unpaid Premiums Deductible from Loss

The Commodity Credit Corporation was defeated Oct. 30, 1939, in a suit against the American Equitable Insurance Co. on fire policies on cotton in a warehouse destroyed by fire.

The C.C.C. had entered into a contract with the Truman Compress & Warehouse Co. whereby it was to pay $\frac{1}{2}$ c per day for each bale of cotton stored, which payment was to cover storage and insurance charges in the warehouse at Truman, Ark.

The warehouse company paid \$1,750 of the required premium, but its checks for the remaining \$250 of the \$2,000 were dishonored. The policies were issued Nov. 10, 1935, for the "account of whom it may concern." Fires occurred Apr. 1, 2 and 4, 1936, when some due premiums were unpaid, but the insurance companies had not previously canceled the policies, as was their privilege. They did cancel Apr. 4, when net premiums of \$5,283.99 were due. The policies aggregated \$550,000.

The fire damaged 197 bales of cotton, of which 102 were identified as government loan cotton. The value of the cotton damaged by fire was \$12,704.62.

When the warehouse company was adjudicated bankrupt May 26, 1936, the C.C.C. made claim against the sureties on the bond executed by the warehouse company to the C.C.C., and the sureties settled its claim for the amount due the C.C.C.

The court held that the C.C.C. was in fact the assured and by its failure to report increase in cotton stored which would have caused increase in premiums avoided notice of additional premiums provided for in the policies, and the insurance companies were not precluded from asserting claim for unpaid premiums against C.C.C. by having failed to cancel policies when default occurred. Therefore the insurance companies could deduct the premiums due from the losses paid the C.C.C. The C.C.C. sued for the net loss of \$5,455.76 but the court deducted the unpaid premiums and awarded only \$476.22.—*Supreme Court of Arkansas*, 133 S. W. Rep. (2nd) 433.

Asked—Answered

[Readers desiring trade information should send query for free publication here. The experience of brother dealers is most helpful. Replies to queries are solicited.]

Freight Rate on Option Corn?

Grain & Feed Journals: If we buy corn for May delivery, and take delivery in May, what kind of billing do we get from the Chicago elevator?—T. S. Burton.

Ans.: Rule 1636 of the Chicago Board of Trade provides that regular elevators are required to furnish live transit billing to holders of warehouse receipts when such grain has been loaded out for shipment by rail, entitling the shipper to the proportional or reshipping rate from Chicago to Eastern Trunk Line territory.

Fumigant Perils Life

Grain & Feed Journals: There is a fellow going thru the country using some kind of gas that kills rats, claiming it is harmless.

Is it not a fact that calcium cyanide recommended in the Journal Mar. 13 to be used to kill rats is poison to human beings and all other animals with respiratory organs?—F. H. Schlicht, Union Grain Co., Burlington, Okla.

Ans.: Any gas that kills rats will kill humans. The single exception is a solid substance, not a gas, red squill, which kills rats and is harmless to chickens and other farm stock.

The calcium cyanide powder, when blown into a burrow, combines with the dampness to form hydrocyanic acid gas, a most deadly poison, if breathed by animals or man.

Financing Purchases of Grain and Feed?

Grain & Feed Journals: How are purchases of grain and feed financed?—New York Dealer.

Ans.: On carloads shipped in with draft and B/L the local banker may take buyer's note to meet draft.

For grain bought locally from farmers the local banker will honor checks issued by the buyer to the farmers.

For buying futures speculatively the Board of Trade brokerage firm will furnish the funds, except the necessary small margin.

In a few instances operators of a grain elevator buy on a commission for a terminal grain firm that supplies all the capital to pay for grain.

Testing Oats for Germination?

Grain & Feed Journals: Please advise me how to test seed oats for germination?—Cyrus S. Weiss, Wilkes-Barre, Pa.

Ans.: In the Journal Mar. 13, page 220, will be found instructions on testing seed oats by Jas. E. Barnes, botanist of the Illinois State Division of Seed Inspection.

In addition, freshly harvested cereals such as oats that do not germinate readily by the usual method should be germinated at 15 degrees Cent., or by the prechilling method; i.e., the test should be kept in an ice box for three to five days, and then the test should be completed at room temperature.

The preliminary count for oats may be made in 3 days and the final count in 5 days.

If the temperature happens to fall below that scheduled the duration of test should be extended. The foregoing are the recommendations of the Ass'n of Official Seed Analysts of North America.

Corn prices slightly above the current market, or around 50c per bu. to farmers, would lead to a sharp increase in sales and individual use of this commodity in preference to acceptance of C.C.C. loans and compliance with A.A.A. acreage allotments, according to the Iowa manager of the mortgage loan department of a major insurance company. "With the price strengthening a great many farmers are using their corn rather than sealing. More free corn is available for sale."

Driveway Chatter

BY TRAVELER

SITTING at his desk near the scale beam, at one side of a door entering his office, V. R. Dillavou, manager of the Farmers Elevator Co. at Bondurant, Ia., was disturbed by cold drafts thru the door when customers entered.

Yet the office is so high that Dillavou almost had to use this desk for his book work so that he might be sure to notice trucks driving on the scale deck and give prompt weighing service.

Dillavou did the obvious. He erected a plywood shield from the floor to the ceiling of the office, between the door and his desk, to deflect and warm the cold drafts by circulating them thru his furnace heated office before they could reach him.

The shield stays up the year around. In the summer time it keeps the summer breezes from disturbing the papers on his desk, yet does not cut off circulation of air.

Coming Conventions

Trade conventions are always worth while, as they afford live, progressive grain dealers a chance to meet other merchants from the same occupation. You can not afford to pass up these opportunities to cultivate friendly relations and profit by the experience and study of others.

Mar. 31, Apr. 1, 2, 3. Society of Grain Elevator Superintendents, Royal York Hotel, Toronto, Ont.

Apr. 1, 2. Kansas Farmers Co-operative Ass'n, Hutchinson, Kan.

Apr. 18, 19, 20. California Hay, Grain & Feed Dealers Ass'n, Los Angeles, Cal.

Apr. 27. Western Seedsmen's Ass'n, Hotel Fontenelle, Omaha, Neb.

May 6, 7. Illinois Grain Dealers Ass'n, The Pere Marquette Hotel, Peoria, Ill.

May 10, 11. Texas Grain & Feed Dealers Ass'n, Fort Worth, Tex.

May 15, 16. Oklahoma Grain & Feed Dealers Ass'n, Youngblood Hotel, Enid, Okla.

May 21, 22. Kansas Grain, Feed and Seed Dealers Ass'n, Salina, Kan.

May 23. Grain, Feed and Millers Ass'n of Missouri, Hoxsey and Ben Bolt Hotels, Mexico, Mo.

May 23, 24. American Feed Manufacturers Ass'n, French Lick Springs Hotel, French Lick, Ind.

May 24. Oregon Feed Dealers Ass'n, Multnomah Hotel, Portland, Ore.

May 27, 28, 29. Pacific States Seedmen's Ass'n, St. Catherine Hotel, Santa Catalina Island.

June 7. Pacific Northwest Grain Dealers Ass'n, Pendleton, Ore.

June 16, 17, 18. Ohio Grain, Mill & Feed Dealers Ass'n, Neil House, Columbus, O.

June 19, 20, 21. Southern Seedsmen's Ass'n, Jefferson Davis Hotel, Montgomery, Ala.

June 20. Pennsylvania Millers & Feed Dealers Ass'n, Harrisburg, Pa.

June 24, 25, 26, 27. American Seed Trade Ass'n, Palmer House, Chicago, Ill.

Sept. 26, 27, 28.—Pennsylvania Millers & Feed Dealers Ass'n, Atlantic City, N. J.

Oct. 14, 15. Grain & Feed Dealers National Ass'n, 44th annual, Brown Hotel, Louisville, Ky.

Superintendents to Meet in Toronto

Toronto is preparing for one of the largest conventions in the history of the Superintendents' Society, according to word received from President T. C. Manning, North Kansas City.

Their annual technical program will include pertinent discussions on maintenance, personnel relations, engineering problems, power questions, drying, dust collection, records and systems of binning, storage headaches, infestation, sampling, inspection, cleaning, grade changes, lubrication, safety, weighing, fire and explosion hazards, circumventing depreciation, cutting shrinkage, designing an addition, insurance requirements, weatherproofing, the shop, signals, leg belt tighteners, air compressing equipment, advantages and disadvantages of level or grades on the service tracks, car pullers, cable troubles and their remedies, and a score of similar kindred problems so important to the successful and profitable operation of any grain handling or products plant.

The delegates will leave Chicago on a special coach over the Michigan Central-Canadian Pacific on Sunday, March 31, and will hold their busy sessions in the Royal York Hotel. A party rate of \$15.35 for the round trip will be in effect. Inspection trips are also scheduled. Tickets will be good on Saturday trains.

Sunday Morning, March 31

Registration; Get Acquainted Session; Sightseeing; Church; Exhibits, etc.

Sunday Afternoon—Executives' Session

Directors' Executive Session.
Standing Committees' Meetings.
Chapter Executives' Meeting.

Monday Morning Session

President T. C. Manning, Presiding
Welcome to Toronto; Announcements—Mr. F. T. Carnegie, Secretary, Toronto Elevators, Ltd. Greetings from the Association of Operative Millers—Joseph I. Chamberlain, Maple Leaf Milling Co., Toronto, President.
Response—T. C. Manning, Uhlmann Grain Company, North Kansas City, Mo.
President's Annual Report—T. C. Manning.
Secretary's Annual Report—Dean M. Clark, Chicago.

Committee Reports—Auditing, Insurance, Engineering, Membership, Dust Explosion, Safety, Program, Name, and Constitution and By-Laws.

Appointment of New Committees—In addition to the above, Nominations and Resolutions. Looking at the Grain Trade—Ray B. Bowden, Executive Vice-President, Grain & Feed Dealers National Association, St. Louis.

Monday Afternoon Session

Production and Testing of New Varieties of Wheat—Dr. L. H. Newman, Dominion Cereal-ist, Department of Agriculture, Ottawa.

Looking Ahead—T. C. Manning, North Kansas City, National President.

The Super Abroad—R. B. Pow, Reliance Grain Co., Ltd., Fort William.

Government Storage of Grain—Paul Christensen, Van Dusen-Harrington Co., Minneapolis.

The Keeping Qualities of Corn in Relation to Moisture Content—Harold Wilber, A. E. Staley Mfg. Co., Decatur, Ill.

Unloading Headaches—G. L. Parsons, President, Godrich Elevator & Transit Co., Ltd., Godrich, Ont.

Exporting Grain Through Saint John—T. C. MacNabb, General Superintendent, Canadian Pacific Railway, St. John, N. B.

Soybean Clinic, Selection for Particular Usages, Storage Problems, Processing and Handling Shrinkage (1% Is Unaccounted For)—Louis Ambler, The Glidden Co., Chicago.

Monday Dinner Session

Vice President Gilbert P. Lane, Presiding
Great Lakes Shipping and Its Opposition to the Deep Waterway Project—Captain F. J. Davis, Secretary-Treasurer, Canadian Navigators Federation, Toronto.

Tuesday Morning Session

Use and Care of Belting—Dunlop Tire & Rubber Co., Toronto.

Inspection Tours through some of the ultra-modern Grain Handling and Processing Plants.

Tuesday Luncheon Session

Vice-President Percy C. Poulton Presiding
Comparative Value of Barley for Feeding—E. W. Crampton, Associate Professor of Animal Nutrition, MacDonald College, McGill University, Ste. Anne De Bellevue, Que. (This presentation will be based upon barley feeding tests conducted in Eastern Canada under the Auspices of the National Barley Committee.)

Grain Cleaning Clinic—F. Maynard Losie, Hallet & Carey Co., Secretary Minneapolis Chapter.

Car Unloading—John Coughlin Brooks Elevator Co., Minneapolis.

Round Table Clinic on: Shrinkage Due to Handling, Drying and Cleaning; Sampling, Weighing and Inspection; Methods of Estimating Grain Stored in Bins; A Super's Responsibility; Personal Relations; Infestation, Storage Problems; Maintenance, Lubrication, Waterproofing, the Shop, Car Pullers and Cable Troubles; Washing; Drying; Avoiding Depreciation; Dust Control; Designing an Addition, Signals; and Records and Binning Systems.

Watts Watt, Electrically Speaking—Gilbert P. Lane, Arcady Farms Milling Co., Chicago, National Vice President.

Power Problem Clinic—H. H. Van Ornum, Hart-Carter Co., Minneapolis.

Wednesday Morning Session

C. J. Alger, Chicago, Presiding
Dust Explosions, Their Cause and Their Prevention—C. J. Alger, Corn Products Refining Co., Argo, Ill., President Chicago Chapter.
Sound Movies on Recent Dust Explosions.
Preventing Accidents and Injuries—W. Dean Keefe, Assistant to the Vice President in Charge of Safety Engineering, Lumbermen's Mutual Casualty Co., Chicago.

Safety Film—(Now being circulated by the Society.)

Presentation of Safety Trophies—Oscar W. Olsen, Chairman, Safety Committee, Globe Elevator Co., Duluth. (Cups for the Annual Safety Contest Presented Through the Courtesy of the Hart-Carter Company, Minneapolis, and the Ben J. Many Corp., Chicago. All-time Safety Trophies Presented Through the Courtesy of the H. H. Robertson Co., Pittsburgh, and the Appraisal Service Co., Minneapolis.)

Wednesday Afternoon Session

President T. C. Manning, Presiding
Workmen's Compensation—R. B. Morley, General Manager, Industrial Accident Prevention Association, Toronto.

Committee Reports: Unfinished Business; New Business; Election; Directors' Meeting; New Committees' Meetings; Social Hour.

Wednesday Banquet—Associates' Night

Grover C. Meyer, Kansas City, Chairman
Dinner, Entertainment, Dancing—You are invited to be the Guests of The Society's Associate Members for the Evening.

From Abroad

The Argentine government is said to have taken over a number of private grain elevators for incorporation into the government system.

Argentina has announced that beginning in 1941 only the government will be authorized to buy wheat with which to build up surplus supplies to be resold on the domestic market if a severe shortage occurs.

Argentina—The Argentine government is reported offering wheat to Rosario exporters at 57½¢ per bushel. Freight rate to Antwerp still stands at 85¢ per bushel, making the c.i.f. Europe cost \$1.43.

United Kingdom has prohibited importation of potatoes, cereal breakfast foods and canned ravioli, spaghetti, macaroni, and vermicelli, except under license from the board of trade. The order became effective Mar. 25.

South African corn shipments since Aug. 1 have totaled 20,739,000 bus., compared with 12,161,000 bus. a year ago. Principal buyer is the Continent, but Canada is reported to have a stock of 1,124,000 bus. of this corn.

Argentina—The Bank of the Nation at Buenos Aires has announced it will loan up to 9¢ per bushel to Argentine corn growers to cover picking operations, and to be secured with ear corn in sheds, where it can be held for more favorable markets.

Canada is following a policy of keeping its wheat stored in dominion elevators at the expense of the producer and selling it to Britain as it is needed, according to remarks of J. G. Gardiner, minister of agriculture, in Winnipeg. "It would probably be possible to sell all Canada's existing wheat stocks to Britain at the present world price," he said, "but this would only mean that farmers would receive an additional 10¢ a bushel over their guaranteed price," or approximately 80¢.

Letters from the Trade

[The grain dealers' forum for the discussion of grain trade problems, practices and needed reforms or improvements. Dealers having anything to say of interest to members of the grain trade are urged to send it to the Journals for publication.]

Has Requested Arbitration

Grain & Feed Journals: We have read with interest under your column "Asked-Answered" the letter addressed you by the Dunklin County Grain & Seed Co., Malden, Mo., and your reply. Dunklin County has naturally put its best foot forward in presenting the difference between us and we appreciate your fairness in suggesting the question is properly one for arbitration.

We offered to allow Dunklin County to appear as plaintiff but failing to hear from them after a week, we have filed a request for arbitration with the Grain & Feed Dealers National Ass'n.—C. B. Fox Co., New Orleans, La.

Truck-Compelled Rail Rates

Grain & Feed Journals: On Dec. 16, 1938, the Kansas City Board of Trade along with other Missouri River and interior Kansas and Missouri markets, at a joint meeting in Kansas City presented to the railroads a plan for truck compelled rates on coarse grains. The purpose of this was to recapture and return to normal channels the vast amount of grain lost to itinerant truckers. You can believe it or not but "railroad wheels" turn to "wagon wheels" when it comes to rate adjustments for about the middle of February, 1940 (or about 14 months later) a part of these requested rates became effective.

The railroads are not responsible for all of the delay, nor all of the things that are still wrong and unworkable under the new adjustments. The grain trade and the I.C.C. must likewise assume their share of the responsibility. Within these 14 months we believe the railroads have changed their ideas most decidedly and now realize the need of action.

A great victory has been won, but vastly greater work lies ahead in trying to make these new rates work where they will, and in correcting them where they will not work. Every country and terminal grain dealer, as well as each I.C.C. Commissioner should join in this endeavor to re-establish the railroads, as well as grain merchants, on a sound, profitable basis, thru the recapture of business rightfully theirs.—S. C. Masters, Kansas City, Mo.

Decline in Wheat Under Loan

A decline of over 10,000,000 bus. in the amount of wheat under C.C.C. loans showed in the week ending Mar. 7, the largest decline for any week since the peak of borrowing early in January. The decline was attributed to accumulation of monthly reports of banks and private lending agencies, rather than sudden liquidation.

The C.C.C. still had loans on 123,211,000 bus. of wheat on Mar. 7, compared with 133,265,000 bus. Feb. 29, and approximately 167,000,000 bus. Jan. 16.

Corn loans increased 9,000,000 bus. between Mar. 8 and Mar. 13, when 238,070,000 bus. were sealed on farms. In addition, resealings held 161,696,000 bus. of the 1938 crop, and 849,000 bus. of the 1937 crop in farm cribs, bringing the total of the three crops held on farms with government funds to 400,615,000 bus. At the middle of February, the C.C.C. also owned 88,500,000 bus. of corn delivered to it and stored in steel bins, and country, and terminal elevators.

Leaking Cars at Superior

H. A. Juneau, state weighmaster for the Wisconsin Grain & Warehouse Commission, at Superior, Wis., in his annual report covering the condition of cars, offers the following information:

Out of a total of 34,908 cars received during 1939, 226 carried newly nailed or cleated patches, 798 had leaks at the sides, ends, bottoms, or corners, 1,205 had leaks at the grain doors, 67 had leaks stuffed with rags, paper or waste, 38 showed depressions in the grain lines, 34 had broken seals, 20 had seals improperly applied, 28 had no side door seals, 1 had the side door cleated, 37 had no end door seals, 10 had lost their seals, 23 had broken hasps on the doors, 8 arrived with a side door open, 9 arrived with an end door open, 1 had an end door boarded.

Grain door leaks in 1939 amounted to 3.45% of all cars of grain received. This is up very little from the preceding year, when 3.07% of the cars received had grain door leaks, but in 1937 only 1.9% of the cars received showed such defects. The low in leaking cars of grain was 1934, when only 1.1% of the cars arriving showed leaks.

Claims were filed for shortages on 891 of the 34,908 cars received, an average of about 1 in every 39 cars received. The average shortage per car was 14.44 bus., or 884 lbs. The condition of 829 of these cars on which claims were filed was considered good, 50 were leaking, 12 were patched.

Country elevators billed out 1,360 cars arriving at Superior during 1939 that contained shippers' weight cards. Four of these cars weighed out even, 1,061 weighed out short, 295 weighed out over. The total number of pounds over the weights declared on shippers' weight cards was 286,788 lbs., the total short was 594,558 lbs.

A comparison of out-turn weights on good order cars received from Minneapolis, Duluth, and in cross-town movement at Superior, showed differences from preceding years: 7.21% of the cars from Minneapolis were short 100 lbs. or less, 80.65% were short 200 lbs. or less, compared with 12.3% and 79.6% respectively, in 1938, 12.6% and 89.3%, respectively, in 1937. From Duluth the record showed 49.3% of the cars received were short 100 lbs. or less, 96.48% short 200 lbs. or less, compared with 17.9% and 83.6%, respectively, in 1938, 31.8% and 87.5%, respectively, in 1937.

In cross-town movement 66% of the cars were short 100 lbs. or less, 97% were short 200 lbs. or less, compared with 44.9% and 93.4%, respectively, in 1938, 39.7% and 94.8%, in 1937. Minneapolis cars unloaded at Green Bay, Wis., showed 85% short 100 lbs. or less, 100% short 200 lbs. or less, compared with 93.3% and 100%, respectively, in 1938, 77.7% and 88.8%, respectively, in 1937.

Cincinnati, O.—We have written to Congressmen urging support of H.R. 7696 to amend the Grain Standards Act to place soybean grading under the same control as grain grading. We have assurances from both our Hamilton County representatives, Charles H. Elston and William E. Hess, that they will use their influence to get the measure out of Com'ite and bring it before the house for a vote.—James M. Berry, purchasing agent the Drackett Company.

Crop Reports

Reports on the acreage, condition and yield of grain and field seeds are always welcome.

Carlsbad, N. M.—There is practically no grain raised in lower Pecos Valley, just alfalfa and cotton.—A. C. Hemenway.

Breckenridge, Tex.—Wheat about the same as last year; oats about 10 per cent increase; barley about the same; crop is late and we are needing rain.—E. L. Russell.

Bryan, Okla.—Oats is being put in the place of wheat, one-third gone or too late to have very much of a chance. March winds have not done much damage yet.—Byron Grain Co., O. E. Allen.

Beattie, Kan., Mar. 20.—The wheat is in good condition. There will be none plowed up as far as we know. About 20 per cent of the wheat is back in farmers' hands, and about 30 per cent of the corn.—J. L. Mason.

Brady, Tex.—Wheat controlled by government 10 per cent more than last year; condition good, subsoil good, surface dry; need rain. Oats is in same condition; barley same. No grain to speak of in farmers' hands.—Spiller Grain Co.

Alexandria, Neb.—Wheat acreage 4 per cent increase over 1939; oats and barley, 15 per cent increase over 1939. Wheat plowed up and put into oats and barley, 15 per cent. Wheat condition fair; grain in farmers' hands, 5 per cent.—Alexandria Mills.

Burlington, Okla., Mar. 20.—The amount of wheat on farms as compared with last year is about the same, or 5 per cent more. About 10 per cent will be plowed up or sowed to barley and oats. The wheat crop looks poor now compared with last year.—The Burlington Grain Co., Perry Evans.

Spokane, Wash.—An increasing number of farmers in this section are harvesting alfalfa, sweet clover, red clover and grass seed. A conservative estimate is that 20,000 lbs. of alfalfa, 15,000 lbs. of sweet clover, 5,000 lbs. of red clover and 10,000 lbs. of grass seed were produced in Spokane County the past year.—F. K. H.

Sapron, Okla., Mar. 20.—Wheat condition very poor; about 20 per cent has been planted to barley and oats. Looks the worst I have seen it in the 21 years I have been here. Only a few good fields, the balance in late and I don't see how it can make over 3 to 8 bus. Will have to have generous rains to do that.—C. A. Johnston.

Barnes, Kan., Mar. 20.—Wheat in this country is in fine condition, with very little winter kill and enough moisture to carry it a month of ordinary weather. Roads have been in a deplorable condition for 30 days on account of snow and mud. Oats and barley will be planted soon if dry weather continues.—Ricard Grain Co.

Ashton, Kan., Mar. 20.—Some fields showing some growth; others poor condition not showing much. Some sowing oats, others waiting for further developments. From what I observe, 60 per cent in Sumner County will be abandoned; 10 to 15 per cent wheat in farmers' hands; some selling government-stored now. Some moisture, will need more soon.—Deer Creek Elevtr. Co., I. O. Mills, mgr.

Attica, Kan., Mar. 20.—Wheat in this county looks now like 50 per cent abandoned to oats, barley and row crops. The better part of the wheat looks like 50 to 75 per cent, average 60 to 65 per cent. The amount of grain on the farms is smallest for several years, less than 1 per cent. Government loan wheat nearly all in terminals. Very small amount of feed grains raised here last year and most all fed up to livestock.—Earl B. Baker.

Minneapolis, Minn., Mar. 16.—The only news of growing crops in the United States concerns Texas. For the last two years this section has had a drouth. If there had been sufficient moisture last autumn, probably a large acreage would have been planted. A rain was received at Christmas and in early January about 30,000 acres were sown. On Jan. 18 a cold snap destroyed all the flax that was up. The present estimate of Texas acreage is 15,000.—Archer-Daniels-Midland Co.

Winchester, Ind., March 23—Farmers are pretty discouraged about their winter wheat. Most of them report that it looks rather sickly. It is just good enough they don't want to tear it up and not good enough to be very promising. We don't see how we can have a full crop. I make that statement with a little caution, as you will remember Mr. Goodrich has stated several times, this county never has a total failure.—Goodrich Bros. Co., C. C. Barnes, Exec. V.-Pres.

Decatur, Ill., Mar. 23.—Illinois wheat came thru the winter with practically no damage. Unless there is damage from this time on due to freezing and thawing or from sudden, severe drops in temperature, we look for very little abandonment. Altho top growth is not as large as in some previous years, the few warm days we have had so far caused the plant to begin to green up and in most fields the green rows can now readily be seen across the field. At this time there is every evidence that plants are alive and will show a very marked improvement in growth with favorable growing temperatures. There were 1,819,000 acres of winter wheat seeded in the fall of 1939, which was 5 per cent less than the preceding year.—Baldwin Elevator Co.

British Columbia Elevator Capacity

The Board of Grain Commissioners for Canada reports that as of Feb. 15, 1940, the total terminal and mill storage capacity in British Columbia was 22,251,110 bus.

At Cloverdale is one elevator of 30,000 bus. capacity, operated by the Surrey Co-operative Ass'n; at Prince Rupert one of 1,250,000 bus. operated by the Canadian Government; at New Westminster four elevators, Buckerfields, Ltd., 20,000; Brackman-Ker Milling Co., 90,000; British Columbia Distillery Co., 151,110, and Searle Terminal, Ltd., 750,000 bus.

Victoria has one elevator, of 1,008,000 bus. capacity, operated by the Gillespie Grain Co.

Most of the elevators are at Vancouver, no less than 14 houses being operated by 12 different concerns. The largest is the 6,585,000-bu. house of the Pacific Elevators, Ltd. Alberta Wheat Pool No. 1 operates 5,150,000 bus.; United Grain Growers Terminals, Ltd., 2,705,000; Alberta Wheat Pool No. 2, 1,650,000; Midland Pacific Terminal, Ltd., 1,500,000; Gillespie Terminal Grain Co., Ltd., 600,000; Buckerfields, Ltd., 500,000 and 200,000, with six houses of 35,000 bus. or less capacity operated by United Distillers, Ltd., Pacific Milling & Grain Co., Atlas Flour Mills, McLellan & McCarter, and Marpole Grain Co.

Grain Movement

Reports on the movement of grain from farm to country elevator and movement from interior points are always welcome.

Houston, Tex.—During February, 1940, 257,600 bus. of wheat were loaded at Houston for foreign ports, by vessel; during that month in 1939 1,221,300 bus. were shipped.—L. P. Clausen, chief grain inspector, Houston Merchants Exchange.

Soybean Exports from Oct. 1 to Feb. 1 totaled 10,198,997 bu., against 2,562,653 bu. during the corresponding period of 1938-39. January exports were 1,609,671 bu., against only 34,349 bu. in January, 1939. The Netherlands increased their imports from the United States from 155,941 bu. in Oct. Jan., 1938-39, to 6,245,520 bu. in Oct.-Jan., 1939-40.

Philadelphia, Pa.—Receipts and shipments of grain during February, 1940 compared to those of February the preceding year, shown in parentheses, expressed in bushels, were as follows: Receipts—wheat, 1,296,456 (453,189); corn, 926,938 (10,191); oats, 77,240 (7,176); barley, (2,757); shipments: wheat, 1,674,281 (471,791); corn, 1,528,805 (384,449); oats, 9,005 (20,489); rye, (80); barley, 2,473 (2,363).—John W. Frazier, managing director, Philadelphia Commercial Exchange.

Indianapolis, Ind.—Receipts and shipments of grain during February as compared to Feb., 1939, expressed in bushels, 1939 shown in parentheses, were as follows: Receipts: wheat, 248,000 (87,000); corn: 1,624,000 (1,443,000); oats: 458,000 (740,000); rye: 27,000 (21,000); barley: (6,000); soybeans: 30,000 (30,800); shipments—wheat: 135,000 (54,000); corn: 1,477,000 (985,000); oats: 448,000 (718,000); soybeans: 16,500 (12,400).—W. H. Hoard, Sec., Indianapolis Board of Trade.

Duluth, Minn.—Considerable spring wheat is reported booked to move from here to Chicago when navigation opens at rates ranging from 3½c to as low as 3c per bu. Farmers have rushed marketing and shipping of grain to terminals during March, with daily car receipts running far ahead of last year's movement. As a result elevator stocks have increased rapidly, a million or more bushels a week. Car shipping showed no great activity. Elevators on Mar. 21 held 32,533,000 bu., bulk of it wheat, with holdings expected to pile up, though on a lessened scale as arrivals tend to slow down. Heavy redemption of government loan wheat featured in the early month with a gradual slackening as the month drew to a close.—F. G. C.

Daily Closing Prices

The daily closing prices for wheat, corn, oats, rye, barley and soybeans for May delivery at the following markets for the past two weeks have been as follows:

	Option		Mar.		Mar.		Mar.		Mar.		Mar.		Mar.		Mar.		Mar.	
	High	Low	13	14	15	16	18	19	20	21	23	25	26	27	28	29	30	31
Wheat																		
Chicago	109½	63½	101½	101½	101½	101½	101½	101½	105½	105½	105½	106½	106½	106½	106½	106½	106½	106½
Winnipeg*	92½	54½	87½	88	88½	88½	87½	88½	90	89½	89½	90½	89½	89½	89½	89½	89½	89½
Kansas City	104½	58½	95½	96½	95½	96½	95½	97½	100	99½	99½	101½	100½	100½	100½	100½	100½	100½
Minneapolis	107	67	97½	97½	97½	97½	97½	98½	101½	100½	100½	101½	100½	100½	100½	100½	100½	100½
Duluth, durum	99½	61½	87½	87½	87½	87½	87½	88½	90½	90½	90½	91½	91½	91½	91½	91½	91½	91½
Milwaukee	109	64½	101½	101½	101½	101½	101½	101½	102½	105½	105½	105½	106½	106½	106½	106½	106½	106½
Corn																		
Chicago	63½	42	55½	56½	56½	55½	55½	56	56½	56½	56½	56½	56½	56½	56½	56½	56½	56½
Kansas City	58½	42½	55½	55½	55½	55½	55½	55½	55½	55½	55½	55½	55½	55½	55½	55½	55½	55½
Milwaukee	63½	44½	55½	56½	56½	55½	55½	55½	56½	56½	56½	56½	56½	56½	56½	56½	56½	56½
Oats																		
Chicago	43	27½	41½	41½	40½	40½	40½	40½	42	41½	41½	41½	41½	41½	41½	41½	41½	41½
Winnipeg*	45½	27½	39½	39½	38½	38½	38½	38½	39½	39½	39½	39½	39½	39½	39½	39½	39½	39½
Minneapolis	39½	27	37½	37½	37½	36½	36½	37	38½	37½	37½	37½	37½	37½	37½	37½	37½	37½
Milwaukee	42½	28½	41½	41½	40½	40½	40½	40½	42	41½	41½	41½	41½	41½	41½	41½	41½	41½
Rye																		
Chicago	77½	43½	65½	65½	64½	64½	64	65	67½	67½	67½	68½	67	67	67	67	67	67
Minneapolis	71½	41½	61	61½	60½	60	59½	61	63½	62½	63½	64½	63½	63½	63½	63½	63½	63½
Winnipeg*	82	40	71	70½	69½	70½	69½	70	72½	72½	72½	74	73½	73½	73½	73½	73½	73½
Duluth	74½	62½	63½	63½	62½	62½	62½	63	65½	65½	65½	66½	65	65	65	65	65	65
Barley																		
Minneapolis	48	37½	42½	42½	42	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½	42½
Winnipeg*	55½	33½	52½	52	50½	51½	51	51½	53½	53½	53	53½	53½	53½	53½	53½	53½	53½
Soybeans																		
Chicago	131½	67	115	114	112	111	109½	109½	112½	112½	112½	112½	112½	112½	112½	112½	110½	110½
*Canada Exchange			831	820	817	818	818	820	815	813	825	808	805					

Vancouver, Wash.—A full cargo of wheat for Vladivostok was loaded, taken by the Greek tramp steamer Gerassimos Vergottis. Archer-Daniels-Midland Co. supplied the wheat.—F. K. H.

Longview, Wash.—The Norwegian motorship, Anna Odland, recently took on approximately 3,500 short tons, being the third Norwegian ship to load in less than a week, and the fourth vessel to take on a grain cargo here in the past month.—F. K. H.

New York, N. Y.—Receipts and shipments of grain during February compared with those made the preceding February, shown in parentheses, expressed in bushels were: Receipts—wheat, 517,600 (532,100); corn, 19,500 (58,500); oats, 70,400 (52,800); rye, 390,000 (1,700); barley, 15,300 (8,500); flaxseed, 430,000 (260,000); millfeed, tons, (20); shipments—wheat, 2,091,000 (787,000); corn, (77,000); rye, 218,000; barley, 235,000; clover seed, 2,994 (2,690); timothy seed (6,000).—Dept. of Information & Statistics, New York Produce Exchange.

Fort William, Ont.—J. R. Gibson, manager of Hallet Carey Swart, Ltd., returning from a trip to the west coast early this month, stated a larger than normal percentage of the grain from the Canadian west will flow to world markets thru the Canadian head of the lakes this year. Due to the necessities of wartime, a smaller amount of western wheat will be shipped out of the Dominion via the west coast ports than is usual. Most of the grain, he stated, will be sent thru Fort William and Port Arthur, and he looks for a busy spring and summer season in transportation and elevator industries.

Ottawa, Ont., Mar. 21.—Canadian wheat in store for the week ending Mar. 15 decreased 2,280,263 bus. compared with the preceding week and increased 172,533,246 bus. when compared with the corresponding week in 1939. Wheat receipts in the Prairie Provinces for the week ending Mar. 15 mounted to 1,778,970 bus., an increase of 90,537 bus. over the preceding week when 1,688,435 bus. were marketed. During the corresponding week a year ago the receipts were 1,275,403 bus. Marketings in the three Prairie Provinces for the 33 weeks from Aug. 1 to Mar. 15, 1940, as compared with the same period in 1939 were as follows, figures within brackets being those for 1939: Manitoba 50,723,845 (41,149,838); Saskatchewan 209,408,925 (105,594,674); Alberta 116,559,798 (118,289,139) bus. For the 33 weeks ending Mar. 15, 1940, and the same period in 1939, 376,692,568 and 265,033,651 bus. were received from the farms.—R. H. Coats, Dominion Statistician.

Volume of Future Trading Increased

During the month of February the volume of trading in wheat futures on the Chicago Board of Trade increased to 533,166,000 bus., from 132,654,000 bus. in February, 1939.

The increase parallels the increase that occurred in January, from 241,238,000 a year ago to 610,145,000 in January, 1940, and in December, from 264,550,000 in December 1938 to 868,640,000 bus. in December, 1939, as reported by the Commodity Exchange Administration.

In the corn market, which is dominated by government loan corn, there was no increase, but rather a decrease, from 66,577,000 bus. in February, 1939, to 45,839,000 bus. in February, 1940. It does not seem wise to buy corn futures while the government holds over 360,000,000 bus. on loan that will have to be sold some time.

Among the underlying forces which have contributed to the prospects for higher wheat prices are (1) expectation of a long war in Europe which eventually will result in increased purchases of wheat, especially from Canada and United States; (2) the reduction of the crop in Argentina and high ocean rates from that country, which will increase exports from Canada during the remainder of the current season; and (3) the poor crop prospects in the United States, which may result in limited domestic supplies of certain qualities of hard wheat.—Extension Service of Kansas State College.

Burocratic Intrusion Into Grain Trade Without Congressional Sanction

By WALTER SCOTT, Sec'y Kansas City Board of Trade

As the 1939 crop came on a new loan program was offered co-operating producers, and it became necessary to consider how to care for the huge total of 1938 corn resealed or acquired together with the probable amount to be sealed under the 1939 program. It is estimated that this total is approximately 500,000,000 bus. To make room for the 1939 corn to be stored on the farm, the acquired grain and much of that which was resealed was shelled and moved into storage off the farm.

OBSERVING THE GOVERNMENT'S NEEDS in this regard, grain dealers united in offering facilities for storage in terminal and subterminal elevators of all corn that might be moved off the farm over and above the capacity of local country elevators to accept and store the grain. A reduced storage rate of 7 cents per bushel per year was offered to government, and sufficient room was assured in many instances by shipping out wheat at no profit. In all 130,000,000 bus. of space was arranged.

As early as July 19, 1939, the grain trade, thru the Terminal Elevator Grain Merchants Ass'n and the National Commission Men's Ass'n, began offering their services to the Agricultural Adjustment Administration and the Commodity Credit Corp. in connection with the handling of the corn which would come into the possession of the government. Various conferences were had and studies made of the available storage and the best means of handling the grain, the conferences contemplating the use of the trade's storage facilities. In the end, however, the government's officials refused to use these facilities and determined to provide its own storage by the purchase of steel tanks or bins. Such tanks to the aggregate of 86,000,000 bus. capacity were bought, and over 75,000,000 bus. of corn were placed in storage in these tanks. The cost of the tanks was reported to be 9½ cents per bushel, and 3 cents per bushel was paid for erection and filling.

Less than 20,000,000 bus. found its way into terminal and subterminal elevators and only then because the movement of the corn from farms had begun before the steel tank program was well started. Grain merchants who had anticipated a favorable result of the conferences mentioned above and had made provision to take care of the government's corn, were thus left with over 100,000,000 bus. vacant space.

THE COMMISSION MERCHANTS in the several central markets also united in urging the government to utilize storage room in such markets and sought for themselves the opportunity to handle the grain and perform the usual services necessary to the transportation, storage, and sale of grain. The steel tank program has, of course, deprived them of such opportunity, and in connection with such grain as was moved to central markets the government refused to allow the commission merchants to participate but undertook thru its own offices and its own personnel to perform the services referred to.

In addition to these measures, the considerable amount of corn acquired in liquidation of loans has been merchandised by Commodity Credit Corp. instead of selling to the established trade for resale.

THE CORPORATION SELLS TO FINAL BUYERS at the same price as to the established distributors and thereby has made it impossible for the latter to use their trained and experienced organizations and earn a profit. The Corporation could have sold the grain in large lots to distributors, and thus have avoided the building up of a competitive sell-

ing organization, with the consequent sales expense of distributing to smaller final buyers.

SUMMARIZING the effects upon the grain trade of the method of handling the corn loan programs, we see:

That the government has deprived established merchants of the opportunity to store its corn in their elevators and thereby earn the reduced storage offered to the government.

That to avoid using storage space in the central markets at a reduced storage rate of 7c per bus. per year the government has purchased and erected steel tanks at a cost of 12½c per bus.

That the government has refused to utilize the established marketing machinery for merchandising the corn which it has acquired, thereby depriving the trade of the opportunity to handle the grain and earn a profit.

That the government, by storing and merchandising this grain, has made it impossible for commission merchants to perform the usual services and earn their commission.

That even when the government has shipped corn to central markets for storage it has refused to use the services of commission merchants but provides its own personnel.

That the government has definitely entered into the grain business in competition with its citizens.

That policies of the government such as those herein described if continued must finally extinguish the grain trade.

CONCLUSION.—As clearly appears from the foregoing the Department has adopted policies in the handling of loans on grain that result in great injury to the established grain trade, and which, if continued, threaten the existence of the industry. THIS RESULTS FROM NO EXPRESSED POLICY OF CONGRESS BUT SOLELY FROM THE CHOICE OF METHODS BY THE DEPARTMENT.

The policy of the Agricultural Adjustment Act of 1938 in respect of loans is to assist



W. R. Scott, Secretary Kansas City Board of Trade.

The CCC's Program for Corn Storage

farmers to obtain parity prices so far as practicable (section 2), and loans are to be made when prices are below parity or when the supply is excessive. The loan policy is, therefore, of an emergency nature, and loans are to be made only when the stated conditions prevail. It follows that when such conditions are not present, the policy of Congress is to allow grain to be marketed in the usual way.

It further follows necessarily that it is desirable in the public interest that the grain marketing machinery of the country be fostered and preserved in full vigor so it may function efficiently and economically under normal conditions. To assure this the trade must be permitted to live under the emergency conditions which justify loan programs. The Department's policies would stifle and starve the industry during such periods.

THERE IS NOTHING IN THE ACT which indicates any intention on the part of Congress to put the government in the grain business nor to deprive the grain trade of the opportunity to earn a living. There being no such indication, the Department should administer the loan provisions of the Act in such a way as to utilize existing facilities and trade personnel in the making of loans and storing and merchandising grain which has been acquired in liquidation of loans.

Nothing herein said is directed at the policy of Congress under the Agricultural Act of 1938 but only to the administration of that Act by the Department. The grain trade stands willing and anxious to assist in carrying out the policy of Congress. It asks only for an opportunity to serve, both during periods of emergency and under normal conditions. It submits, however, that it cannot be starved in emergencies and expected to function in full vigor at other times.

Some Wheat Loans Extended

Marvin Jones, Texas congressman, who is chairman of the House Com'te on Agriculture, said Mar. 21 "wheat loans by growers in dry land sections of Texas and the Great Plains maturing in April would be extended another year. An official announcement by Secretary of Agriculture Wallace will be issued shortly."

As predicted by him the A.A.A. announced extension for one year of loans would be granted on farm stored wheat in Kansas, New Mexico, Colorado, 22 counties in Oklahoma and 27 counties in Texas. This is in addition to ten northwest states previously granted the privilege of loan extensions beyond Apr. 30. Rye loans may also be renewed on the same basis as wheat for one year.

Farmers have redeemed over 44,000,000 bus. since the peak of 167,000,000 bus. wheat loans was reached in mid-January.

Open Interest in Future Deliveries

As reported by the C.E.A. for wheat, corn, oats and rye, and by the Board of Trade Clearing House for soybeans the open interest in all futures on the Chicago Board of Trade recently has been as follows, in 1,000 bus.:

	Wheat	Corn	Oats	Rye	Soybeans
Dec. 2	79,518	43,613	16,716	6,711	6,477
Dec. 9	77,276	43,449	16,138	7,266	6,840
Dec. 16	79,553	45,691	16,065	8,565	6,941
Dec. 23	83,538	48,280	15,628	9,534	6,957
Dec. 30	84,062	48,243	15,507	10,625	6,948
Jan. 6	86,017	49,517	15,329	11,532	7,011
Jan. 13	84,355	47,650	15,324	11,256	7,140
Jan. 20	84,136	46,876	15,096	11,842	7,230
Jan. 27	84,570	45,188	14,623	11,738	7,203
Feb. 3	79,457	43,857	14,161	12,475	6,746
Feb. 10	79,262	44,067	16,644	12,919	6,768
Feb. 17	81,351	44,400	14,427	13,021	6,701
Feb. 24	86,092	44,644	14,181	13,955	6,412
Mar. 2	90,782	44,234	13,888	13,847	6,397
Mar. 9	91,405	43,501	13,627	14,066	6,630
Mar. 16	91,195	42,464	13,561	14,224	6,497
Mar. 23	91,874	42,136	13,681	14,522	6,425

[From an address by F. Peavey Heffelfinger, Chairman of the National Grain Trade Council, before the Society of Grain Elevator Superintendents at Minneapolis.]

In the fall of 1938 the Commodity Credit Corporation loaned 57c per bushel on ear corn in cribs, on the farm. Under this program loans were taken by farmers on approximately 222,000,000 bus. In addition to this, farmers resealed from the 1937 crop approximately 35,000,000 bus., making a total of approximately 257,000,000 bus. of sealed corn. These loans came due on Aug. 1, 1939, but the Government later extended the period to Aug. 1, 1940.

At the expiration of the loan the farmer had three alternatives:

1. To reseed the corn on his farm either on the ear or after shelling, and the Commodity Credit Corporation would allow the farmer 7c per bushel for restoring until Aug. 1, 1940. The farmer thereby retained title to the corn in case the market should go up to a point where he could sell, pay off his loan, and have some equity.

2. The farmer could shell and haul to a country elevator and still retain equity and pay said country elevator storage charges. (Please note that the farmer could not ship the corn to a terminal elevator and store it and retain title.)

3. The farmer could deliver the corn to the Commodity Credit Corp. and relinquish title.

STARTING as early as May, 1939, the Commodity Credit Corporation was in touch and held conferences with representatives of the Terminal Elevator Grain Merchants Ass'n relative to the handling and storing of the corn which Commodity Credit would receive on these loans. The Commodity Credit Corporation officials, of course, could not be certain as to the amount or percentage but they knew they would get considerable corn. The details of storage rates, handling charges, etc., were settled after negotiations and contracts agreed upon with the Commodity Credit Corporation.

It is interesting to note that special rates were granted the government, namely, a 7c storage rate for a twelve months' period and 1c handling charge. This was little more than half the regular rates and was granted by the terminals because the discussions contemplated the general use of terminal facilities and a large volume, and also because it was rumored that there were some individuals in the Department of Agriculture who favored the building of terminals by the Government to compete with existing facilities.

Then, too, most terminal operators tendered their available space as of August, 1939, on a special Commodity Credit form for that purpose.

In addition, officials of the Commodity Credit were in constant touch with the officials of the Terminal Elevator Grain Merchants' Ass'n and with terminal elevator operators in the various markets constantly checking as to the available room and fearful that there would be insufficient space in terminals for the corn they expected would be handed them by the farmer.

Sometime in July or August there were rumors concerning the purchase of steel bins for the storage of this corn at country elevator points. The Government made several purchases of bins and in view of the fact that there was no specific announcement it was assumed that these steel bins were to be used for the overflow of corn which the country and terminal elevators could not store. To start with, in view of the fact that there was no specific announcement on the part of the Government and on account of the attitude and concern of Government officials about the amount of terminal elevator space, it was naturally assumed that in the storage of corn the following would be the procedure.

1. Farmers would have an opportunity to reseed on the farm as outlined previously.
2. Country elevator space would be used to capacity.

3. Terminal elevators would be next in line as long as there was available space in them.

4. Steel bins might have to be used for any overflow.

IT IS RATHER SIGNIFICANT to consider that the Commodity Credit Corporation was transferred on July 1, 1939, from Jesse Jones' Reconstruction Finance Corporation to the Department of Agriculture by executive order of President Roosevelt, and this may have had a great deal to do with the change of policy in the order of storing corn which followed shortly after.

Sometime in August it became apparent from press releases and information from Government officials that the Commodity Credit Corporation under the direction of Secretary Wallace and others intended to use steel bins ahead of grain terminal elevators in the storage of corn.

On Sept. 1, 1939, H. M. Stratton, President of the Terminal Elevator Grain Merchants Ass'n wrote a letter to J. W. Goodloe, Vice President of the Commodity Credit Corporation again urging the use of terminal elevators and outlining the fact that in his opinion there was ample space in terminal elevators for the storage of any amount of corn the Commodity Credit Corporation might reasonably expect to get from the farmers.

By the middle of September it became certain that the terminal elevators were going to be overlooked in the storage of this corn and at that time a committee of the Terminal Elevator Grain Merchants Ass'n made a trip to Washington and following conferences with various Governmental officials first, finally had an interview with Secretary Wallace. This interview with Secretary Wallace was confirmed in a letter to him under date of Sept. 20, 1939, signed by H. M. Stratton, President of the Terminal Elevator Grain Merchants Ass'n, again restating the case of the terminal elevators and outlining the fact that there was 130,000,000 bus. of space available for corn in country elevators, sub-terminals and terminals.

It might be fitting right here to state that ever since the corn started to move, in September and October, 1939, there has been some 70,000,000 to 80,000,000 bus. of vacant space in terminal elevators in Omaha, Kansas City, Minneapolis and Duluth-Superior.

THE CONFERENCE with Mr. Wallace and others developed nothing. The terminal operators were simply told that the philosophy of the ever-normal-granary demanded that this corn be held at country points in these steel bins. However, later developments and discussions with high Government officials in the Department of Agriculture and the Triple A would now lead one to believe that there is no objection to a certain amount of the ever-normal-granary stocks at terminal points, and of course as far as the ever-normal-granary is concerned it is well to remember that a lot of the corn was resealed or held by farmers in their own names in country elevators totaling about 190,000,000 bus. and the new corn under loan (that is the corn maturing in the fall of 1939) as of this writing totals 229,000,000. So there is certainly a substantial amount of corn in the ever-normal-granary right on the farm aside from that stored in steel bins erected on railroad right-of-ways.

THERE IS VERY GOOD REASON to believe that the Government bought the steel bins to take care of the overflow of corn which they expected to get over and above what they could store in both country and terminal eleva-

tors. At the time they put in orders for the steel bins (prior to the war) they expected that farmers would turn over to the Commodity Credit Corporation much more corn than was finally delivered. War and other factors caused the farmers to reveal more of this corn on the farm than the Government originally anticipated, but the Government had already made commitments for the steel bins so the terminal grain operators "took the rap" for the Agricultural Department's miscalculation. One can well imagine the uproar there would have been had the Government purchased some seventy-five million bushel capacity of steel bins and left them empty, which would have been the case had they followed the plan we in the grain trade think was their original intention, namely, to use the steel bins for the overflow which country and terminal warehouses could not handle.

It is also a moot question as to whether this corn is better located at the country points or at terminal markets like Omaha and Kansas City, where it is available for quick shipment west into consuming areas; and in Minneapolis and Duluth-Superior, for certain consuming areas in the East, down the Great Lakes, and for export.

AS TO COSTS: the approximate cost of steel bins to the Government amounted to 9c per bushel of capacity. The average freight rate would be about 3c per bushel of capacity and the County Committees that handle these steel bins allow 3c a bushel to the country elevator for erecting them, weighing the corn, and filling them—making a total of 15c per bushel. Then, of course, someone will have to pay to take the corn out, weigh it over the country elevator scales and load it into railroad cars or trucks. Estimating this at another 3c per bushel it brings the total to 18c per bushel. This as against the 7c storage and 1c handling charge for terminal elevators, which makes a total of 8c for a twelve-months' period agreed on with the Government, and this low rate includes full insurance. So, the corn could have been stored for two years in well equipped terminal elevators at less than the cost involved in the use of these steel bins. Then, of course, there are many other costs that should be figured against the steel bins, such as interest on the investment, the work of a large army of conservation committees, inspectors, County Triple A offices, etc., which would be impossible for even the Government to compute.

ANOTHER CONSIDERATION is the question as to how the corn will keep in these steel bins, without the supervision which a well-conducted elevator gives. There is a wide difference of opinion on this point although apparently Government officials believe that the corn so stored will keep in good condition. They may be wrong, however; but whether they are right or wrong there certainly is a greater risk involved than if the corn were stored in an elevator. It definitely is an additional hazard, no matter what the final outcome may be, for the reason that it is an untried experiment on such a large scale.

Of course, it is true that the corn put in these steel bins in the fall of 1939 had been carried over on the ear from the fall of 1938 and presumably was without mixtures of new corn. It went direct from the farm into the steel bins and, therefore, escaped the risk of having new corn mixed with it in country elevators. Then, too, the great popularity and increased percentage of Hybrid corn has meant a better quality for storage.

THIS PROGRAM has become one of grave concern to the railroads and to railroad labor. Naturally they are interested because there is no question but what the storage of this large supply of corn in steel bins affects tonnage on the railroads and definitely plays into the hands of truckers.

ANOTHER FEATURE of the program that is decidedly detrimental to the interests of the rail carriers and their employees is that the steel bins now used for the storage of corn moved quite generally on Land Grant rates and the

corn when shipped from these bins will undoubtedly move in a like manner. We know that a considerable quantity of corn has already moved on Land Grant rates which are approximately 40% to 50% of the normal or full commercial tariff rate. This involves another type of Government competition with private grain dealers and is likewise costly to farmers with corn of their own to sell. The point is that dealers who are forced to pay full freight rates for corn moving into areas which the Government reaches with the low Land Grant rates must deduct an amount equal to the difference in freight charges from the price paid to the producer for his corn. All railroads suffer from this situation. Those carriers subject to Land Grant rates must carry this freight for the Government at a price below cost. Competing railroads are likewise obliged to meet the low Land Grant rates or forego handling this traffic.

There is also the supposition that corn which goes out of condition in the steel bins will be sacrificed and sold cheap to consumers and farmers in the local areas, and to truckers. Thus it will not come through the terminal markets in the usual manner. If this occurs there will never be any record as to what percentage of the corn goes out of condition because the official Inspection Departments will not have an opportunity to determine its true quality.

No one knows what the practice might be next year or in the future years, provided there is only enough corn to fill either the steel bins, or the country elevators. In that event, with the Government owning the steel bins, there is considerable suspicion that it would fill these first and leave the country elevators without the storage. This question has been put to several high Government officials in the Department of Agriculture, but no definite answer has been received.

The steel bins are now owned by the Triple A, but under the present intentions the ownership is to pass to the County Committees of the Triple A through an accrual of credit out of storage of the corn, so that eventually, in two or three years, the bins will become the property of the local County Committees through these earnings. Thus the Committees would be in position to engage in the grain business insofar as these facilities would allow.

THE CORN IN THESE STEEL BINS is not farmers' corn. It is not loan corn. It is the property of the Commodity Credit Corporation. It belongs to the Government. The farmers have no interest in it any more and, therefore, it makes absolutely no difference to the farmers in the matter of their loans as to whether this corn is stored in country elevators, in terminals, or in steel bins. All of it could have been stored in terminals without affecting the farmers in any way. There is the guess, of course, that the Government wants the corn in steel bins at country points staring the farmers in the face with an apparent huge surplus so they will be ready to accept acreage reduction in corn planting.

There is nothing in the Triple A legislation which requires that corn be stored in these steel bins. This is strictly a matter of administration of the present Act.

We in the grain trade have reason to believe that prominent leaders in the farm organizations such as the American Farm Bureau Federation, The Farmers Union, and The Grange, as well as cooperatives engaged in the grain business, are opposed to the use of steel bins leaving terminal elevator space vacant. We understand that they have even voiced their disapproval to the Department of Agriculture.

Country elevators, terminals and the grain trade generally speaking have not opposed the loan programs designed for the benefit of farmers. On the contrary they have endeavored to cooperate in making them effective. They have acceded to the Government's demands for special rates, and generally are on record as attempting to make the Government's agricultural program helpful to the farmers, even though

there are individuals in the trade who do not agree with the program.

It cannot be changed fairly that trade criticism of the manner in which the corn storage program has been administered is based solely on selfishness. The Government could have saved the large sum of money spent for the purchase, erection, filling and maintenance of these steel bins if it had utilized the terminal storage space offered to it in good faith at exceedingly low rates. We feel the corn itself, in which the Government has a stake amounting to many millions of dollars would have been in safer storage and in better marketable position. The empty warehouses would have received business they had a right to expect and there would have been more employment for their crews. There would have been additional revenues for the railroads and their employees, as well as for samplers, inspectors, and others whose work depends upon grain receipts in terminal markets.

Washington News

S. 570 provides for parity prices for farm products.

S. 2605 defines "co-operative ass'n" under the A. A. Act.

H. R. 8825 would create an independent Farm Credit Administration.

H. R. 8769 provides for payments to farmers from a processing tax on wheat, rye, flax, barley, cotton, field corn, grain sorghums, hogs, rice, tobacco, and peanuts.

The Senate Mar. 22 passed the bill appropriating \$1,013,000,000 for the Department of Agriculture. It will go back to the House, which had appropriated \$300,000,000 less.

Even the Bureaucrats who enjoy regulating and dominating industry are now beginning to recognize that you cannot crucify the employer without hurting the employee.

By 63 to 19 the Senate Mar. 20 added \$212,000,000 to the farm bill for parity payments. With \$85,000,000 to be added for surplus disposals, the farm bill is boosted to \$922,000,000.

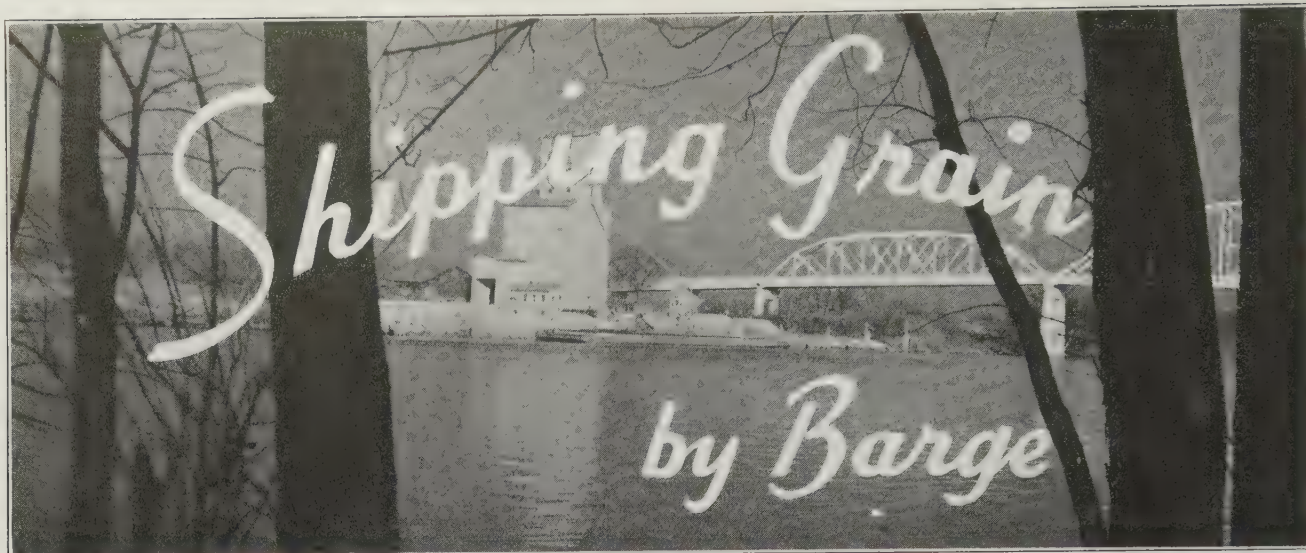
Senator Guy M. Gillette of Iowa, a democrat, is working to take control of the Farm Credit Administration from Sec'y Wallace, fearing a change in policy leading farmers to believe no repayments would be demanded.

Representative Doxey, of Mississippi, member House Agricultural Com'te, has drafted a bill to re-enact processing taxes to finance farm programs. He would place processing taxes in the general fund instead of a special farm benefit fund.

Washington, D. C.—Objections to the amended recommendations of the Public Contracts Board on minimum wages in flour mills filling government contracts have been filed by the Millers National Federation. Effect of the recommendations, claims Herman Fakler, vice president of the federation, is to limit the number of flour mills which may bid on government business.

The Wyoming-Wisconsin Resolution for the XXII Amendment to the Constitution of the U. S., which would limit income, gift and estate taxes to a maximum of 25%, and would recall the unlimited taxing powers of the federal government granted by the XVI Amendment, was introduced in the Mississippi Legislature Feb. 28, is conceded to have a good chance of adoption. The resolution has passed both houses of the Wyoming Legislature, the Wisconsin senate unanimously, the Iowa house, and the Rhode Island senate. Behind it is the Western Tax Council, which is undertaking its passage in 32 states.

Wheat Ground by 1,051 reporting mills during the 7 months prior to Feb. 1 amounted to 290,644,487 bus., against 286,954,932 bus. ground by 1,120 mills during the like period of 1938-39, as reported by the Bureau of the Census.



New Bridge making Territory on Both Sides of Illinois River Available to the Seneca, Ill., Barge loading Elevator of the Co-operative Allied Grain Dealers Corp.

Plying busily up and down the system of inland waterways created by dredging channels thru the sand bars and shallow spots in the great rivers that drain the middle west are hundreds of flat-bottomed barges, and diesel or steam powered tow boats.

Freight has always been carried to a greater or lesser extent on the broad lower Mississippi river, and on the swift water in the Ohio. But this traffic increased sharply when government dredges followed patterns laid down by U. S. army engineers to make barge traffic practical on the Illinois, the upper Mississippi, and the Missouri rivers. New river ports on these rivers increased the flow of traffic all over the system by giving it broader outlets, and by making available to river ports and their trade territories a longer list of commodities and manufactured articles at low river freight rates.

Grain is one of the principal commodities moved downstream on the rivers. Grain accounts for a large share of the tonnage carried south out of St. Louis by the Federal Barge Lines and the Mississippi Valley Barge Lines, and it is the principal source of income for several private tow boat operators on the Illinois river.

The volume of grain moved over the inland waterways goes up and down with variations in supplies and in consuming demand. For example, the Federal Barge Lines, largest single operator of barges on the inland waterways, normally carries 2,000,000 tons of freight annually. This tonnage increased to 3,000,000 in 1938, when a heavy export demand arose for corn, and this single commodity accounted for nearly all of the increase.

Grain Receipts by Barge			
	1939 bus.	1938 bus.	1932 bus.
Chicago	17,084,000	11,822,000	none
St. Louis	4,516,120	5,033,366	none
New Orleans	13,493,393	25,447,769	7,577,255
Grain Shipments by Barge			
	1939 bus.	1938 bus.	1932 bus.
Chicago	16,000	30,000	none
St. Louis	6,963,766	11,796,800	4,909,302
New Orleans Receipts by Barge			
	1939 bus.	1938 bus.	1932 bus.
Wheat	3,379,072	4,742,725	1,345,165
Corn	9,974,364	20,569,212	5,897,799
Oats	139,957	11,941	315,179
Rye		23,891	19,112

THE FEDERAL BARGE LINES which now has 400 barges, most of them with capacity for 2,000 tons each, a few with capacity for 500 tons each and known as "puddle jumpers," and 27 tow boats, depends for much of its business upon sisal, sulphur, sugar, coffee, cotton linters, wood pulp, pulp board, news print, oyster shell, coal, and similar commodities

moving upstream; auto parts, beer, agricultural implements, iron and steel, heavy industrial goods, canned goods, and other merchandise moving downstream.

The Federal Barge Lines publishes a rate structure that averages 20% below the all-rail rate between given river points, and maintains as regular service as the river channels will permit. Its barges and tow boats ride the rivers between Minneapolis and New Orleans, Kansas City and St. Louis, Chicago and St. Louis, and two of its tow boats and several barges operate constantly in the Warrior River service between Birmingham, Mobile, and New Orleans in Alabama and Louisiana.

The Federal Barge Lines has no docks of its own. Its regular service is maintained to and from municipal docks principally, which it pays a per ton fee for dock service.

THE MISSISSIPPI VALLEY BARGE CO., operating between Cincinnati, St. Louis, and New Orleans on the Ohio and lower Mississippi rivers, principal competitor of the Federal Barge Lines, follows a similar rate structure and maintains similar towing schedules.

Grain looms large in the volume of business these companies receive at central markets like St. Paul, St. Louis, Kansas City, and Memphis, for movement south, and in the volume of freight discharged at New Orleans. In central markets terminal elevators have large lots of grain that can be moved readily by regular schedules. But grain from country loading points on the rivers has been a small factor in the total business of these barge lines except in unusual years.

Country barge loading points are the bread and butter of several of the private barge lines that operate one or a few tow boats, and from none to a number of barges. These operate as contract carriers. Rates are a matter of bargaining between the barge line or tow boat owner, and the elevator using its services.

PRIVATE BARGES and tow boats handle virtually all of the grain carried from Illinois river loading points, where is found the greatest concentration of barge loading elevators into Chicago, a volume totaling over 17,000,000 bus. in 1939. The Federal Barge Lines has but one tow boat operating on the Illinois river north of Peoria, that is low enough to pass under the fixed bridges in and near Chicago. Kept busy shuttling Federal Barge Line tows between Chicago's Western Avenue terminal and Peoria, and having no time to push barges of grain thru the Sag Canal to South Chicago's barge receiving elevators, this tow boat must turn over to private tow boats any barges of grain it brings in, an expensive procedure compared with the elevator to ele-

vator service offered by the private barge lines on a contract basis. Furthermore, private tow boats stop only when the ice becomes too thick for navigation. This single tow boat of the Federal lines can make but two round trips each week from Chicago to Peoria. This service is not frequent enough to meet the needs of barge loading elevators that have turning basins and dock space for only two or three barges, and elevator capacity for less than one big barge. During a rush movement of grain these elevators must have fast and frequent service. They assure themselves of it by leasing or buying barges, and by contracting with private carriers for pushing service.

Country elevators along the river depend upon barges and tow boats for their existence. If barges are not available at the time they are needed, such elevators are soon filled with grain and are forced to stop buying. The large capacity of barges, which hold from 20,000 to 100,000 bus. of grain, was what baffled the early efforts of shippers to use the river.

Many of the country barge loading elevators are operated by owners of central market elevators, but independents are also strong operators. The Cooperative Allied Grain Dealers Corp., at Morris, Ill., has been very successful. Originally it operated as the Allied Grain Dealers Ass'n, an organization of 25 country elevators off the Illinois river in the Morris territory, all of which has suffered losses of business thru barge competition, and set up the organization to find a remedy. Soon after the Farmers National Grain Corp. barge loading elevator at Morris became available. Twenty-two of the firms operating over 30 elevators within trucking distance of the river, reorganized as the Cooperative Allied Grain Dealers Corp., and leased this 70,000 bus. elevator from the government. O. B. Robbins, former manager of the Farmers Cooperative Elevator Co., at Dwight, Ill., a leader in the group of organizers, was elected to manage the elevator at Morris.

The barge shipping operations of the Farmers National Grain Corp. had not been successful, and Manager Robbins quickly discovered the reason was that barges were none too plentiful. The demand for barges exceeded the supply. Barges could not be had always when and where they were wanted, and it was possible for competitors to corner the supply. So Manager Robbins adopted protective measures by leasing barges, callable on 30 days' notice. If enforced, this provision could still leave a barge loading elevator high and dry during a heavy movement of grain. So the next step was organization of the subsidiary Allied Barge Corp., and outright purchase

from the Dravo Corp. of four 3-compartment barges with capacity for 30,000 bus. of grain each, at a total outlay of over \$42,000.

The small tow boats, diesel powered and efficient, cannot be bought for much under \$65,000. The power problem was settled by contracting with the A. L. Mechling Co. for regular pushing service between Morris, and Chicago elevators fitted with marine legs to unload barges.

With dependable transportation facilities provided, the Cooperative Allied Grain Dealers Corp. was able to load a barge with grain at Morris, send it to Chicago, and have an empty returned in 36 hours. Allowing for normal delays, its four owned barges gave its river elevator handling capacity from 50,000 to 60,000 bus. of grain each 24 hours. By leasing more barges this capacity could be increased when necessary, to the handling capacity of the company's river elevator, which can elevate 4,000 bus. per hour.

Most barge loading elevators on the Illinois river own or lease barges. A barge loading elevator at a country point is a cross between a country elevator and a terminal elevator with some advantages and some disadvantages that are peculiarly its own. Primarily it is simply a transfer house for unloading grain from trucks and running it into the holds of barges. Successful operation means that its wheels must be kept turning for it lives on the movement of grain, not the storage or treatment of it. The barges cannot be filled fast enough by ordinary day to day purchases from farmers. The volume so available would not keep even one barge busy. To build up the necessary volume, a barge loading elevator must buy from tributary country elevators, which deliver by large trucks, usually employing huge semi-trailers for economical hauling of large amounts.

The operator of a barge loading elevator

daily sends his bid to tributary country elevators. To attract grain in needed quantities this bid must be sufficiently high over "on-track" bids at the country elevators to pay for the trucking to the river, and to allow an additional profit to overcome natural human aversion to a new outlet.

The bid is an easily managed governor on the movement of grain thru a barge loading elevator. If grain starts coming faster than it can be handled, dropping the bid reduces the acceptances, and diverts some of the business to rails. If the movement is slow, raising the bid will quickly swell the receipts, and keep the elevator busy.

The territory normally available to a barge loading elevator is bounded up and down stream by competitive barge loading elevators, since one "river bid" is usually about as good as another. The "river bid" will attract grain for distances of about 35 miles inland. Greater distances increase trucking costs.

Another factor besides a location on a high river bank where it will be safe from flood waters, and a prairie country that produces great quantities of grain to be sold into commercial channels, enters into the construction of a barge loading elevator. This factor is a system of hard roads each way from the river to increase the distance grain may be hauled profitably, and a nearby bridge which will eliminate the river as a barrier to trade.

The volume of grain shipped by a river elevator starts near the million bushel mark and goes on up. Wayne Bros. at Oquawka, Ill., on the Mississippi river, in the 1939 season, which was curtailed sharply by low water in the river, caused by drouth, loaded 880,000 bus. in 22 barges that carried an average of 40,000 bus. each. During the more favorable 1938 season the same elevator shipped 1,200,000 bus. of grain.

The Oquawka elevator draws grain from a

heavy feeding territory that produces comparatively little grain for sale. The two elevators at Muscatine, Ia., McKee Grain & Feed Co., and Mississippi Valley Grain & Feed Co., more favorably located from the standpoint of commercial grain production, handled more than 5,000,000 bus. in 1938, have shown a steady increase in volume each year of their operation, except 1939, when low water in September, October, and November, the best corn months, dropped total shipments to an estimated 4,500,000 bus.

In top commercial corn producing territory

Inland Waterways Barge Loading Elevators

(Including central market elevators equipped also with marine legs for unloading barges full of grain.)

Lake Port

Chicago, Ill.—Norris Grain Co. (Iron-dale Elevator), Rosenbaum Bros. (Calumet Elevators), Continental Grain Co. (Rock Island Elevators), Stratton Grain Co. (Star Elevator), Cargill, Inc. (Northwestern Elevator), Star Grain Co. (Rialto Elevator).

Gulf Port

(Barge Unloading Elevators)

New Orleans, La.—New Orleans Public Elevator.

Upper Mississippi River

Minneapolis, Minn.—Municipal Transfer Terminal.

St. Paul, Minn.—Farmers Union Central Elevator.

Clinton, Ia.—Continental Grain Co.

Muscatine, Ia.—McKee Grain & Feed Co.; Mississippi Valley Grain & Feed Co.

New Boston, Ill.—Ogle Bros.

Keithsburg, Ill.—Wayne Bros.

Oquawka, Ill.—Wayne Bros.

Burlington, Ia.—Norris Grain Co.

Mississippi Valley Grain & Feed Co.

Dallas City, Ill.—Dallas City Grain & Feed Co.

Quincy, Ill.—Missouri-Illinois Grain Co.

Lower Mississippi River

St. Louis, Mo., and East St. Louis, Ill.—Continental Grain Co. (Missouri Pacific Elevator), Norris Grain Co. (Burlington Elevator), Cargill, Inc. (Belt Elevator), Fox Grain Co. (Central Elevator).

Memphis, Tenn.—Cargill, Inc.

Missouri River

Glasgow, Mo.—Glasgow Cooperative Ass'n.

Waverly, Mo.—Alma Farmers Elevator Co.

Kansas City, Kan.—Hart-Bartlett-Sturtevant Grain Co. (River-Rail Elevator).

Leavenworth, Kan.—Wolcott & Lincoln, Inc.

Illinois River

Morris, Ill.—Allied Cooperative Grain Dealers Corp.; Finnegan Grain Corp.

Seneca, Ill.—Allied Cooperative Grain Dealers Corp.

Ottawa, Ill.—Norris Grain Co.

La Salle, Ill.—Continental Grain Co.

Hennepin, Ill.—W. W. Dewey & Sons.

Lacon, Ill.—Terminal Grain Corp.

Peoria, Ill.—Continental Grain Co.

Pekin, Ill.—Norris Grain Co.; W. W. Dewey & Sons.

Havana, Ill.—Continental Grain Co.; Norris Grain Co.

Meredosia, Ill.—A. B. Chrisman Grain Co. (under construction).

Naples, Ill.—Norris Grain Co.; Continental Grain Co.

Montezuma, Ill.—Terminal Grain Corp.

Kampsville, Ill.—Fox Grain Co.

Other Grain Loading Points

During the 1938 rush of corn south for export, federal barges were loaded at the following Illinois, Missouri, and Mississippi river points, in addition to river points at which elevators are established and equipped to load barges: New Madrid, Mo.; Cape Girardeau, Mo.; Cora Island, Mo.; Birds Point, Mo.; Osceola, Ark.; Grand Tower, Ill.; Cairo, Ill., and Greenville, Miss. Barges are being loaded with grain more or less regularly at some of these points.



A forceful factor in the barge traffic to Chicago is the Co-operative Allied Grain Dealers Corp. elevator at Morris, Ill.

the volume exceeds these figures. From 500,000 to over 1,000,000 bus. a month are not unusual, and during the rush season, after corn picking starts in the fall, and soybeans are harvested, figures like 2,000,000 bus. a month are reached by river elevators running night and day.

LOW FREIGHT RATES give river elevators a strong claim for patronage. Pushing service alone from Morris to Chicago, for instance, is contracted at about 1c per bu. Investment in barges increases this cost but still keeps the cost under rail rates. No elevator erected along the rivers since dredging of the 9 ft. channels that make large scale operation of barges over long distances possible, has quit business where it has followed consistently the practice of building up volume by buying from inland elevators or protecting the margins of inland elevators in restricted purchases from farmers and truckers, as is the practice of the elevators at all big river shipping points, and with rare exception, the practice of the smaller river stations as well. But there have been times when the elevators had to reduce or cease operations due to low water, or to winter ice.

Water is a necessity to a barge line. The depth of the dredged channel measures the proportion of its capacity to which a barge may be loaded. The depth of the 9 ft. channel in the upper Mississippi river is maintained by 26 locks. In spite of these, barge loadings fell to a low level, and almost ceased for a time late last summer and in the fall, when a long drouth so reduced the volume of water that the locks were unable to maintain the customary channel depth, and barges could not be loaded to capacity.

The same drouth stopped completely the movement of barges on the Missouri river, which is dependent upon the uncompleted Fort Peck Dam in Montana to maintain the water level. A barge loaded with 40,057 bus. of wheat at Kansas City last Aug. 30, was tied up all fall and winter and went down stream with the first Federal Barge Line tow during the second week of March.

Ice in the winter time puts a closed season on the operation of barges on the Upper Mississippi and the Missouri. The Illinois river seldom freezes over solidly and private barge lines continue operation thru most of the winter.

MAJOR DEVELOPMENT of river traffic in grain has come on the Illinois river, perhaps because it was the first to enjoy a combination of a 9 ft. channel and rich prairie land devoted to production of grain for commercial purposes. A little slower in development has been the upper Mississippi, where locks and channel were completed at a later date, but barge loading elevator construction along its banks has been creeping farther and farther north. Such construction reached Clinton, Ia., last summer with erection of an 85,000 bu. elevator by the Continental Grain Co., and is expected soon to reach Dubuque, where a grain elevator has been proposed as a part of the municipal dock.

Dredging of the Missouri river reached Omaha last year, and is expected to be continued to make the stream navigable all the way to Sioux City. The Fort Peck dam is expected to be completed this year and will maintain 8 to 9 ft. of water in the channel.

Feverish activity along the Missouri river banks has followed, even anticipated, the dredges. A loading dock has been constructed at Plattsmouth, Neb., and a grain elevator is soon to be added. Work on a loading dock and grain elevator at Nebraska City is under way. Hart-Bartlett-Sturtevant Grain Co., of Kansas City, has taken a 99-year lease on a river site at Brownsville, Neb., just below a new bridge which guarantees a federal highway, and will build on it a 90,000 bu. elevator to load both railroad cars and barges. The Union Pacific railroad has purchased several acres along the river below Omaha. A permit has been issued for construction of an elevator at Blencoe,

Ia., above Omaha. Sites have been purchased for anticipated dock and elevator construction along the river as far north as Sioux City, where, far in advance of the dredges, the Sioux City & New Orleans Barge Lines, were incorporated last December with \$300,000 capital and a grain dealer for sec'y, to operate "a water transportation service on the Missouri and Mississippi rivers."

For several years after the government had completed dredging a 9 ft. channel up the Illinois river and up the upper Mississippi, the Federal Barge Lines, subsidiary of the government-owned Inland Waterways Corp., were virtually the only one to give barge service to river towns and cities made accessible by water. But as time passed and the demand for barø service on many commodities besides grain became more pronounced old barge companies on the Ohio and lower Mississippi rivers expanded their services, and new barge lines sprang into being. Shipyards at Chicago, St. Louis, and Pittsburg found business good. Orders called for increased barge sizes. Experiment was begun in new types of barges. The construction of barges with their own power plants, several of which have been placed in service on eastern canals and rivers, has started again.

A detailed list of tow boats, barges, their owners, and other information, is published in "Transportation Lines on the Mississippi River System," available from the superintendent of Documents, Washington, D. C., at 25c per copy.

Grain shipped by barge is easily unloaded by elevators fitted with marine legs and power shovels that can reach into the holds. Chicago has five such elevators, St. Louis has four, Memphis has one. But the movement of grain is not confined to such elevators. The practice of unloading barges with clam-shells at intermediate river points has had its beginning and is leading to increased movement of grain by truck from river points into consuming territories. Unloading of barges with a clam shell at Vicksburg, Miss., at Cairo, Ill., and at Louisville, Ky., and transfer of the grain into cars or trucks is reported to have become standard practice. Last year a tow boat successfully

nosed a grain laden barge up the Tennessee river for an interior corn mill, just to see if it could be done.

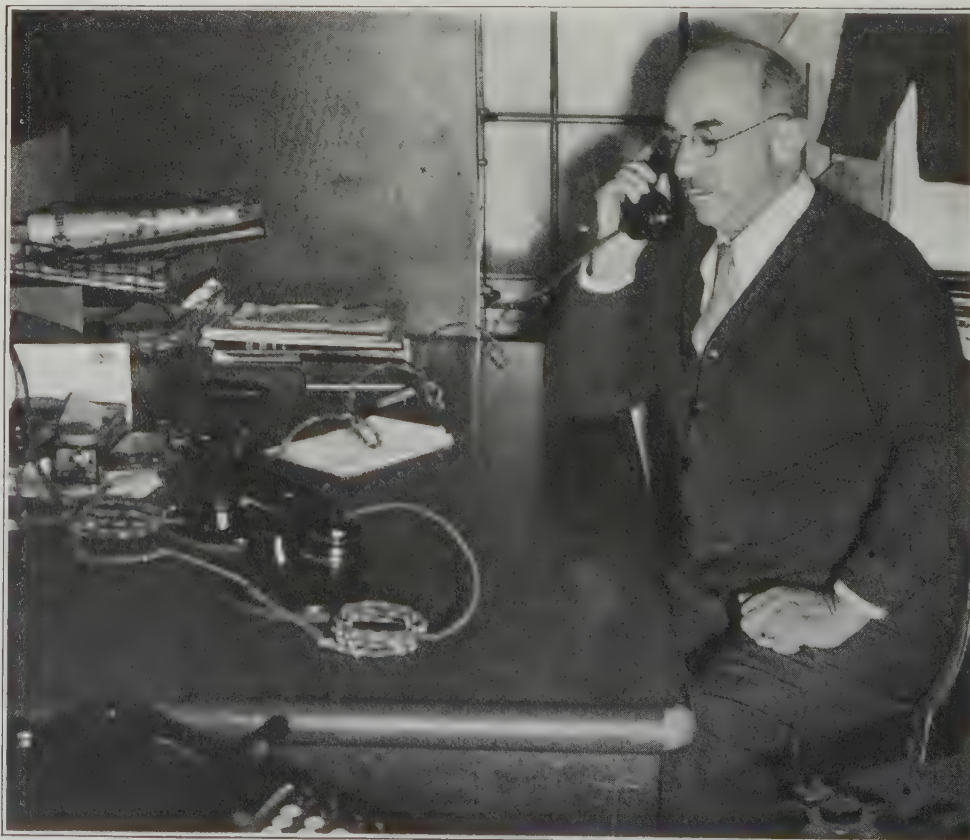
The middle west has claimed the lime light in development of barge traffic, but the Columbia river, held in check by the Bonneville dam, is making broad claims for attention and other sections of the country have experienced increases in the volume of grain moved by barge.

THE NEW YORK STATE BARGE CANAL, from Buffalo to Albany, is kept busy during its open season. Private barges, drawing 7½ ft. of water, ply busily up and down its winding course moving grain and merchandise, on the Oswego river, and the Hudson river between Buffalo, Oswego, Albany, and New York. Cargill, Inc., operates a fleet of barges, several of them self-powered, to carry grain from its Buffalo elevators and the New York state elevator at Oswego, to its 13,500,000 bu. elevator at Albany, the world's largest terminal elevator, where ocean steamers load with grain, and creep down the Hudson river to carry the products of western farms to all parts of the world.

The Division of Canals & Waterways of New York State reports movement of 1,824,239 tons of freight over the New York State Canal eastbound, and 2,864,798 tons westbound during 1939. With the exception of 7,000 tons flaxseed, all grain shipments were eastbound, the greater share of them presumably for export. These eastbound shipments by barge included 321,601 tons of wheat, 104,410 tons corn, 22,051 tons oats, 39,659 tons rye, 3,466 tons barley, 52,666 tons wheat in the form of flour, and 21,042 tons flaxseed.

Feeds, too, give a good account of themselves in barge traffic in the east. The New York State Canal tonnage records for 1939 show east bound movement of 623 tons stock feed, 2,581 tons hay, 3,350 tons oil meal and cake; west bound movement of 77,696 tons molasses, and 1,922 tons prepared stock feeds.

THE COLUMBIA RIVER, reaching back into the interior from the Pacific Ocean, serving much of Oregon and Washington, has been made navigable as far as Attalia by completion last Dec. 20 of a 50 ft. channel, 7 ft. deep, thru



Telephones are kept busy by Mgr. O. B. Robbins of Co-operative Allied Grain Dealers Corp. at Morris, Ill.

the rapids, and work was started immediately to widen the channel to 100 ft. In February of last year the first barge passed down the Columbia with 6,000 bus. of wheat to mark the beginning of barge operations. New barges carry up to 20,000 bus.

Completion of the channel started a beehive of activity on the banks of the Columbia. Port districts have been formed to include grain elevators at Longview, Vancouver, Camas, Hood River, Wasco, Gilliam, The Dalles, Big Eddy, Arlington, Blalock, Roosevelt, Umatilla, Cold Springs and Port Kelley. The Tidewater Transportation Co. is building a grain barge at Attalia to move wheat from Umatilla, where a new elevator is being completed, and from Port Kelley. Many more barge loading elevators are anticipated in the program of the Inland Empire Waterways Ass'n, which has been active in pushing water transportation as a means of reducing the cost of moving Inland Empire wheat to the coast.

In spite of failure of the railroads to set up combination barge-rail rates to cooperate with the barge lines, river traffic is growing. Meanwhile the railroads have successfully established the principle of lower train-load rates than carload rates in a recent decision rendered by the Interstate Commerce Commission. Under fire are the eastern rates on ex-barge grain from Chicago, which have been cancelled once, and the cancellation suspended, awaiting an Interstate Commerce Commission decision not yet made public. And the Wheeler-Lea omnibus transportation bill, which passed both houses in Congress last year, is held up in conference, with opposition growing to its proposed government regulation of water carriers.

Prices for soybeans offered by the Staple Products monopoly in Manchuria have been so low growers have refused to sell, reports Consul Wm. T. Turner at Dairen. The official buying price is 7 yen per picul of 133½ pounds, while beans are traded in on the curb since the exchange was abolished at over 12 yen, justifying the sellers' strike.

Washington, D. C.—Two years ago the average farm horse was worth \$90, today it can be bought for \$77. Mules have declined from an average of \$122 to an average of \$114 per head in the same period. "The substitution of tractors and automobiles for horses has decreased the market for feed crops in an amount equal to the production from 25,000,000 to 30,000,000 acres," says Sec'y of Agriculture Henry A. Wallace. Twenty years ago there were 20,100,000 horses and 5,650,000 mules on farms. Ten years ago the numbers had declined to 13,742,000 horses and 5,321,000 mules, and the decline has continued.

Cost of Handling Grain in Illinois

By DR. L. J. NORTON, University of Illinois before Farmers Elevator Ass'n.

The cost of handling grain varies a great deal among the individual firms. Costs tend to be inversely related to the volume of business. Elevators handling larger volumes of grain typically have lower costs than those with smaller volumes. Average costs mean little or nothing except to the man who happens to operate a firm with average costs.

The data for this report are based on operations of 43 Illinois farmers' elevator companies for the fiscal year July 1, 1937, and June 30, 1938. Figures for other years would have shown much the same thing.

Farmers' elevators do various types of business—some a strictly grain business, others a large merchandise business. To allocate costs accurately between the different branches of the business is impossible. A cost accountant could produce a set of figures which would purport to show accurate distribution of costs between the grain and merchandise divisions of the business, but this would involve a lot of estimation. When a farmer comes in and talks about the weather or politics, should the manager's time be charged to the 3,000 bus. of grain that the farmer will sell when he is ready, or to the \$200 of miscellaneous merchandise that he will buy at odd times during the year? No one can tell.

We have side-stepped this problem by including figures only where 90 per cent of the sales were made up of grain. In such cases, merchandise can be considered a distinct side line, and handling of grain the principal business. The following averages give you a picture of these companies:

Bushels grain handled	280,902
Value of grain handled	\$201,761
Value of merchandise	\$9,796
Total sales	\$211,557
Per cent of sales—grain	95.4%
Income from grain	\$5,950
Income from merchandise	\$1,230
Income from other sources	\$405
Total income	\$7,585
Per cent income from grain	78.4%

In order to calculate the cost of handling grain, we assumed that income from merchandise and miscellaneous sources balanced the costs incurred in handling this merchandise or performing the miscellaneous services. We calculated the cost per bushel for individual companies, as illustrated in Table 1.

Table 1.—Actual Expenses for a Particular Company, Including All Cash Outlays and De-

preciation as Set Up by Auditor and Interest Actually Paid, but Not Income Taxes or Dividends Paid.

Expenses	\$ 7,283
Interest at 6% on net worth	1,802
Expenses and interest on net worth	9,085
Side-line and miscellaneous income	2,403

Difference = (approximate cost of handling grain)

Bushels handled

Cost per bushel

Grain handled	Number of firms	Average cost	Range in costs
Less than 100,000 bus.	4	5.46 cents	3.64-9.01 cents
100-199,000 bus.	7	2.86 cents	1.68-4.73 cents
200-299,000 bus.	14	2.14 cents	1.02-3.56 cents
300-399,000 bus.	10	1.61 cents	.89-2.49 cents
400-499,000 bus.	5	1.81 cents	.79-2.67 cents
500,000 bus and over	3	1.77 cents	1.59-2.13 cents
Average or total 43		1.99 cents	.79-9.01 cents

THE AVERAGE VOLUME handled was 281,000 bus. The average cost calculated as described above was 2 cents per bushel in round figures. Of this, interest on net worth represented .47 cents. Each per cent of interest was therefore equal to .08 cent per bushel.

Costs tended to decline with volume until 300,000 bus. were handled. Above that volume, there was no uniform relationship between cost and volume. Many costs are fixed, and as volume increases these fixed costs are distributed over more units. Hence, cost per unit decreases.

Twenty-four firms had costs of over 2 cents per bushel, and 19 below that figure. The 24 with costs over 2 cents per bushel handled a total of 5,426,740 bus., and the 19 with costs below 2 cents per bushel handled an aggregate of 6,652,060 bus. Thus, over half of the grain was handled by the companies with costs below 2 cents.

With costs above 3 cents per bushel, there were 7 firms, and below that figure, 36. The 7 with costs above 3 cents handled only 7 per cent of the grain.

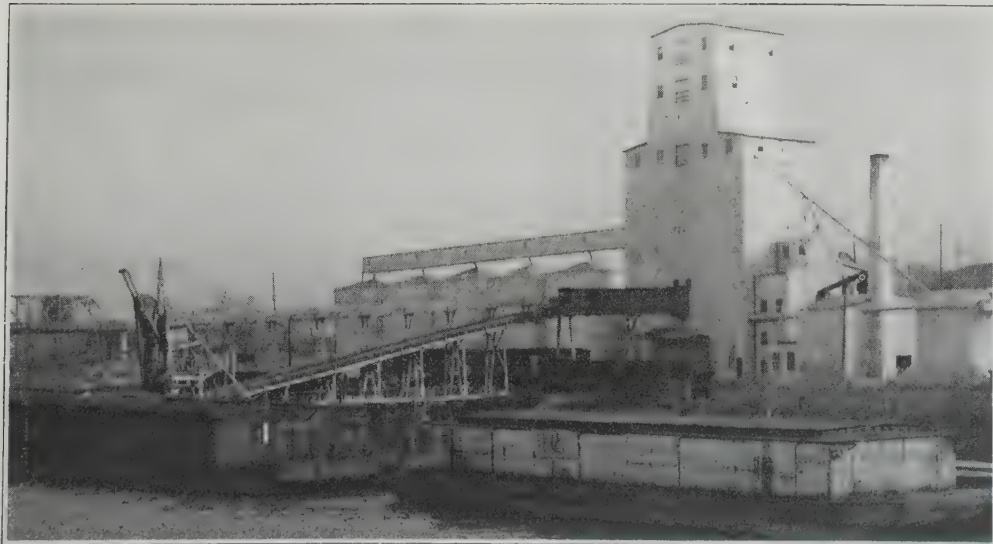
MARGINS EARNED: The average margins earned were calculated for all grain combined—not for individual grains.

Out of the 43 companies, 18 earned gross margins of less than 2 cents on all grain handled, while 25 earned over that figure. The average was 2.12 cents. In economic theory, the term "opportunity cost" is sometimes used, meaning that the cost of doing something is measured by what is given up in order to do it. Thus, if one handled grain on a fee basis, the "opportunity cost" would be the earnings given up in order to handle the business. On the average, this would be 2.12 cents per bushel if measured by gross earnings of these 43 companies in the year studied.

NET RETURNS: These were calculated for each company by deducting from its gross earnings per bushel its calculated cost of handling per bushel. The costs include an allowance of 6 per cent interest on net worth.

On this basis, 18 companies showed net losses, which means they failed to pay expenses and earn 6 per cent on invested capital, while 25 showed profits. The profits of the 43 companies averaged .13 cent per bushel.

AN ALLOWANCE of 2 cents per bushel for handling, unless it involves rendering less service than was furnished by the average of these companies, would cover the costs of only 19 of these 43 companies and would be above the actual gross margins, earned by only 18 of the 43. However, 2 cents covered the costs of companies which handled 55 per cent of the grain handled.



Norris Grain Co., now operate the Turner Hudnut Elevator on the Illinois River at Pekin, Ill.
[See pages 248, 249 and 250]

Cracks in Concrete Tanks and Their Remedy

By JOHN V. SCHAEFER

The adoption of cement concrete for the construction of grain storage was most welcome to grain dealers who had tried wood, steel and tile in a vain effort to obtain durable store houses that would give safe storage free from fire hazards and high construction costs, but the use of concrete brought many new problems.

The early use of stationary forms resulted in horizontal joints in the walls that admitted water that resulted in deterioration of the structure. The adoption of moving forms and the continuous pouring of cement was expected to give fireproof monolithic structures that would provide perfect protection for grain, but many new troubles have arisen to disturb the builders, not the least of which is cracks, vertical, horizontal and spreading cracks.

Cracks in the exterior walls of cylindrical concrete grain bins have long brot endless worry to owners and builders. What causes the cracks and what can be done to prevent them becoming enlarged and admitting water to freeze and cause spalling is still a problem of deep concern to all interested in the safe storage of grain.

Every contractor recognizes the necessity of avoiding seams because he knows rain will beat through the joints, if any are to be found, and the freezing of a small amount of water in an outside wall will soon cause it to spall.

Engineers of experience are generally agreed that some of the failures are traceable direct to insufficient reinforcing or the hoop steel is not lapped sufficiently at the splices to withstand the stress. Some builders still try to construct a strong wall without installing vertical reinforcing other than the rods used for raising the forms.

Doubtless more trouble is traceable to deficient mixtures than anything else, altho engineers well know that a haphazard mixture of aggregates without a rich cement is worthless. Even vigilant construction foremen with

careful, conscientious workmen have been known to let a poor mixture get into the walls.

Too much water or the use of water laden with alkali has been blamed for some failures and high temperatures has quickly evaporated the water and caused the walls to crumble.

Horizontal structural cracks frequently are traceable to hair cracks caused by the rapid drying out and shrinkage of the outside surface while the bulk of the concrete is still wet.

Temperature changes, construction joints, porous spots, and surface defects make these as well as all concrete structures liable to admit moisture and to suffer progressive disintegration. Cylindrical tanks present a special problem because they stretch and contract when they are loaded and unloaded. It is well-known that a grain tank 25 feet in diameter by 100 feet high, when reinforced fully with hooping steel at ordinary stresses, will stretch in its circumference as much as one-half inch as it is filled with grain, provided the steel bands take the tension. When the tank is emptied it returns to its original size.

As the steel bands stretch, very fine cracks often occur in the concrete. Into these cracks the rain penetrates and starts its work of disintegration. Paints, even those designed for durability, as well as other treatments effective on most structures lack the stretching qualities needed to bridge over these cracks. When any coating over the cracks breaks it opens the way for the admission of water, which often causes flaking and spalling. As a grain elevator is filled and emptied there is, therefore, a combined action of stresses due to temperature changes, to the stretching action, and to settlement due to the compression of the ground under the structure.

What is needed is a coating that sticks tightly even if the surface below it should begin to crack, and that will continue to be elastic through years of service, maintaining a rain-tightness in spite of movement, rain or snow, heat or cold.

The method designated by the trademarked name Guntex employs an elastic protective coating and requires a thorough repair and

permanent rehabilitation of the wall. The complete Guntex process consists of a thorough cleaning of the entire surface. This is done by a sand-blasting that searches out every crack, honeycomb or other porous substance.

A thorough repair of the entire surface by cutting out defects, opening up cracks, replacement with non-shrink material, filling moving cracks with elastic joint filler and restoration of entire surface to its original smooth unbroken condition.

Covering with approximately 1/16 inch thick elastic non-oxidizing armour coated Guntex compound applied with compressed air.

Finally painting with aluminum or other heat reflecting surface.

This process has had the test of time—150,000 square feet done in 1934 and one-half million square feet done in 1935 are as good and waterproof today as the day they were finished.

The application of Guntex protective coating, while it is the essential part in the process, is a minor part of the labor and expense. In the picture herewith the four tanks at the left of the headhouse, marked (1) and the six tanks at the immediate right of same marked (4) were old tanks built before the method of grain tank design and construction had reached its present perfection. In these walls were many expansions and construction cracks, much honeycomb and the whole surface had been patched and painted repeatedly. The 25 tanks in the background marked (6) were built in 1935 and had never been patched or coated and had only the cracks due to load stresses.

The preparation of the 26,000 square feet of (1) and (4) took several times as long and cost much more than the preparation of the 36,000 square feet of (6). When the entire 62,000 square feet of old and new had been thoroughly prepared for the Guntex coat the application of same was speedily accomplished at relatively small expense.

War and Wheat

By H. G. L. STRANGE, Winnipeg, before Chicago Grain Market Analysts Club

What will future wheat prices be? Of course, it is anyone's guess, excepting for this, that in all wars in the past, wheat prices have risen faster than almost any other commodity, and this to a great extent because of the inflation of money that takes place with wars. Wheat prices and other raw products are very sensitive indeed to the inflation of money. For instance, since Sept. 1 last the price of wheat at Winnipeg has risen 30% while the prices of the things that farmers have to buy in Canada have risen only by 3%.

Will inflation occur? Well, inflation is already with us, to some extent. One might, I think, to use the simple analogy, say that "The yeast cake of inflation is already mixed with the dough, that the yeast cannot be removed from the dough being already dissolved, and that, therefore, the only point is—how fast and for how long will the 'price' dough continue to rise?"

These inflationary borrowings, quite apart from the Government simply printing money, are the yeast of inflation, and sooner or later the yeast will take effect. At least that is my own belief. Couple inflation with the other price raising factors that I have mentioned, and it seems to me that at least one can say that "springs" are under the market tending to make the price of wheat and all commodities rise, and we must remember too that rises in prices in any one country today will have a fairly quick effect on all other countries. How fast this price rise will be, and when it will occur, and by how much it will occur, of course nobody knows exactly. One can only speak of tendencies. Of course if the war were to cease suddenly and unexpectedly quite soon, then no doubt the present large surplus of wheat would bring its full weight to bear on the market and prices would decline.



The Concrete Tanks of the United Mills at Grafton, O.

Grain and Feed Trade News

Reports of new elevators, feed mills, improvements; changes in firms; fires, casualties, accidents and deaths are solicited.

ARKANSAS

Bentonville, Ark.—The May Way Mills of Grandview, Mo., opened a branch office and feed warehouse here, with Bob Castle of Kansas City in charge as manager.

CALIFORNIA

Orland, Cal.—Grain in the De Pue warehouse and the Art Edwards feed plant was damaged by recent flood waters.

Durham, Cal.—The Durham Grange is converting the old blacksmith building at Dayton Road and Goodspeed St. into a modern stucco structure, to be used as a feed store and feed and flour mill. Improvements are expected to be completed by April 1.

CANADA

Winnipeg, Man.—The Manitoba legislature Mar. 12 unanimously passed a resolution urging the Canadian government to make an additional interim payment to producers of 10c a bu. on wheat.

COLORADO

Holyoke, Colo.—A cupola is being placed on the Holyoke Farmers Elvtr. Co.'s mill and new equipment is being installed in the plant.

Craig, Colo.—D. J. Davis was named receiver for the Craig Farmers Milling & Elvtr. Co., pursuant to a petition for the dissolution of the company. The property of the company will be liquidated.

DENVER LETTER

W. B. Johnson, who has been associated for 20 years with the Colorado Milling & Elvtr. Co. and for the past 10 years manager of the Hungarian Flour Mills, Denver, has resigned this position, effective April 1, to become manager of Golden West Milling Co., of Longmont, Colo.

Denver, Colo.—Officers elected at the recent convention of the Colorado Grain Dealers Ass'n are: L. L. Yowell, Holyoke, pres.; L. H. Connel, Denver, vice-pres.; R. A. Calliar, Sterling, sec'y. Directors are George Irelan, Yuma; Vince Kerwin, Pueblo; Ralph Strong, Greeley; J. W. Campbell, Denver; Glenn Morris, Sterling; Lloyd Case, Durango, Colo.; Charles Deaver, Sidney, Neb., and Rudy Hoffman, Cheyenne, Wyo.

O. P. Sherrill, manager of the grain department of Purina Mills, was elected president of the Denver Grain Exchange at the annual meeting Mar. 9. Other officers named are Chauncey Abbott, mgr. grain dept., Omar Mills first vice-pres.; A. I. Walters ass't mgr. Rocky Mountain Grain Co., 2nd vice-pres.; sec'y-treas., re-elected, Henry G. Mundhenk. On the Board of Directors are Chauncey Abbott, N. A. Anderson, J. G. Dalziel, R. O. Harris, W. B. Johnson, O. M. Kellogg, H. E. Kelly, T. H. Kelly, O. P. Sherrill, A. S. Walters, N. C. Warren, H. L. Wierman and C. E. Williams.

Clarence E. Davis was elected Chief Inspector and Weighmaster of the Denver Grain Exchange on Mar. 1. Mr. Davis entered the employ of the Kansas City Board of Trade as an inspector in 1919, serving in such capacity continuously since that date with the exception of four years from 1920 to 1924, when he was engaged in the merchandising of grain for the John Hays Grain Co. of Wichita, Kan., and manager of that company's branch at Salina the last three years of that period. His addition to the force in Denver has greatly strengthened that department of the Exchange.

ILLINOIS

Lerna, Ill.—E. L. Champion, local grain and feed dealer, died Feb. 18.

Polo, Ill.—Elmer Davis has been named manager of the Rosentiel & Co. elevator.

Union, Ill.—George Shaw, 76, retired partner in the Wertz & Shaw feed mill, died Feb. 6.

Moweaqua, Ill.—The Moweaqua Farmers Co-operative Grain Co. has installed a Soweigh 18-ton Registering Scale Beam.

Victoria, Ill.—Alfred Enoch Saline, 69, manager of the Victoria Farmers Elvtr. Co., died at his home here Mar. 11 after a month's illness.

Toulon, Ill.—Harold Reason has opened for business in the E. H. Doden flour house following a fire that recently destroyed his plant.

Springfield, Ill.—The retailers' occupational tax division has ruled that effective Apr. 1 goods shipped into the state to fill an order will not be exempt from the sales tax if the seller is located within the state of Illinois.

Springfield, Ill.—Jos. Schaffer & Son have temporarily abandoned their rebuilding program. Instead they are remodeling the present warehouse for feed milling purposes. Equipment to be installed will include a feed grinder, cleaner, Eureka one-ton Horizontal Batch Mixer and molasses unit.

Henry, Ill.—W. W. Dewey & Son Grain Co. of Peoria have made application for a permit from the war department to erect an elevator on the west bank of the Illinois River located below the city park and reservoir of the Henry Water Co. It will be the second river elevator located at that point.

Belleville, Ill.—The Richland Milling Co., which operated a flour mill here for more than 40 years, has filed a voluntary petition in bankruptcy. Liabilities were listed at \$30,474.55 and assets at \$7,238.34. A first mortgage of \$10,500 and a note and second mortgage of \$4,000 were the principal liabilities.

Somonauk, Ill.—The Farmers Elvtr. Co., W. H. and W. A. Westbrook, owners, presented its annual Farmers and Feeder night at a hall Mar. 6 when about 400 persons attended, enjoying a program of talks and music followed by lunch and dancing. Speakers for the occasion were representatives of Purina Mills.

Springfield, Ill.—Employees discharged for over-indulgence in liquor outside working hours that reduces their working efficiency may be penalized by having their unemployment compensation benefits delayed as long as six weeks, according to a ruling Mar. 20, by the Illinois Department of Labor, classing such indulgence as "misconduct."

Steward, Ill.—Claude V. Herrman, manager of the Steward Co-operative Elvtr. Co., thru his attorney, pleaded not guilty to the charge of issuing checks to defraud when arraigned in Lee County Circuit Court recently. Bond in the sum of \$1,000 was furnished and the case is expected to be tried in the April term. Herrman is alleged to have executed a check made payable to Ralph Comstock in the amount of \$1,359.47 in payment for corn delivered to the Steward Co-operative elevator without funds to meet payment of the check.

Cairo, Ill.—Swift & Co. Oil Mill on Mar. 11 and 12 formally opened its new modernly equipped soybean processing plant located on land adjoining the company's cottonseed oil mill and hundreds of persons saw the plant in operation. Two super-duo expellers, cleaners and twin driers, all operated by individual power units and housed in new, modern, steel and concrete fireproof buildings are included in the equipment. The storage facilities for beans consist of 50-ft. steel electrically welded tanks, with ramp especially provided for handling beans received by trucks. The mill's present capacity of 1,300 bus. of beans daily will be increased to 2,600 bus. during the year according to W. R. Stone, manager. The storage capacity is 120,000 bus., and three additional storage tanks will be added to increase the capacity to 340,000 bus. during the coming crop year. Work on the additional units is expected to start about May 1.

Ohlman, Ill.—The Ohlman Grain Co.'s elevator suffered some small damage from an exposure fire early in March.

Champaign, Ill.—Swift & Co. plans to increase the annual processing capacity of its local soybean mill to nearly 2,000,000 bus. of beans, nearly doubling the present capacity of 1,200,000 bus. per year. Three more presses for the extraction of soybean oil will be installed in the plant to increase the crushing capacity by 50 per cent. Contracts have been let to the Jas. Stewart Corp. for a 500,000-bu. reinforced concrete annex of 12 additional storage bins 106 ft. high, 24 ft. diameter, capacity 35,000 bus. each, which will bring the storage capacity to approximately 1,250,000 bus. Included, also, in the building program will be the completion of the second side of the extraction mill where will be located increased locker space, showers and other facilities for the employees. A workshop and storage room for tools will be added. An approximate estimate of the cost of the expansion program was announced by Nelson P. Noble, manager, as \$200,000. Work will be completed in time for the fall bean crop. A short spur track will be built at the plant to accommodate the coal cars and make way for oil and bean car switching.

Meredosia, Ill.—The A. B. Chrisman Grain Co. is constructing a concrete, fireproof, 235,000-bu. elevator, designed by Jones-Hettelsater Const. Co. who are consulting engineers and will equip the plant. Preliminary drawings were made by Mr. Chrisman. Six cylindrical tanks, 20 ft. in diameter, and nine interstice bins will rise 110 ft. above the 20-in. concrete slab. At one end of the tanks will be a driveway, 14 ft. wide, 14 ft. high and 36 ft. long, and the dump. A head house will be built over the driveway 14x16 ft., and 110 ft. high, where will be located a cleaner room and three bins, one bin above the cleaner serving as a feeder to the cleaner, and the two bins below, one for cleaned grain, the other for screenings and dust. A three screen, two fan cleaner with a capacity of 1,500 bus. per hour will be installed, driven by a 7½ h.p. motor and V belt. Two of the latest type dust collectors will also be installed. An 80x16 ft. gallery, 21 ft. high, will be constructed above the tanks, to house the head of the grain leg and a 24-inch belt conveyor which will distribute grain to the tanks, bins and a spout leading directly to the automatic scale in the present elevator, and from the scale to railroad cars, thus permitting direct loading to cars without interfering with operations of the present elevator. A 24-in. belt conveyor in the basement will carry grain from the bins to the grain leg for re-elevation. The leg belt will be 6-ply, 10 inches wide, equipped with high speed buckets, operated by a 20-h.p. motor and have a capacity of 3,500 bus. of grain per hour. It will be fed from the driveway by two dumps with a capacity of 450 bus. each. The dumps will be equipped with steel grates and overhead electric truck lifts. All motors thruout the plant will be fully enclosed, fan cooled, ball bearing type, of standard make, and all bearings used in the plant will be either of ball bearing or roller bearing type. All bins will be equipped with thermometers recording temperatures of the grain at all times. When completed the company will have a combined capacity in the two buildings of approximately 300,000 bus.

CHICAGO NOTES

Edward S. Sheehan, 65, a member of the Board of Trade since 1918, died Mar. 13 in the Hotel Sherman where he had stopped when he became ill on his way to his office. He lived at the Lincoln Park West Hotel.

John P. Krebs, 62, a member of the Board of Trade since 1914, died in his home Mar. 16. Mr. Krebs had been employed at the Board of Trade for over 48 years. He formerly was connected with H. A. Rumsey & Co., and acted as floor broker for Harris, Upham & Co., in recent years.

Alexander McD. Simons, a grain broker, was suspended Mar. 19 by the directors of the Board of Trade from the privileges of membership on the exchange for the period of one year, effective at the close of business as of Mar. 21. He was charged by a com'te of the Exchange with irregularities in trading in grain futures.

The Grain Market Analysts Club held a joint dinner-meeting with the Agricultural Club of Chicago Mar. 26, at DeMet's Grill, Board of Trade Building, when Dr. Irving P. Krick, the man who revolutionized weather forecasting, spoke on the subject, "1940 Weather Over the Grain Belt." Mr. Krick is director of the Department of Meteorology, California Institute of Technology, Pasadena, Cal.

Hearing on the solvency of the estate of Arthur W. Cutten was set for May 22, on petition filed by the American National Bank & Trust Co. as administrator of the estate. Mr. Cutten, a grain speculator whose fortune was once estimated at 100 million dollars, died June 23, 1936. The assets of the estate, the petition sets forth, amount to \$416,285; claims against the estate total \$2,018,810, the largest being for federal taxes and penalties amounting to \$1,308,968.

Werner, Spencer & Tolford, Inc., is a new sales organization handling a line of grain and food products in the Middle West. Executives of the new company include Frank J. Tolford, pres., until recently sec'y-treas. of the Illinois Cereal Mills, Inc., Paris, Ill.; Harry A. White, Ralph A. Cassidy and H. W. Corman. Mr. Whiting and Mr. Cassidy were formerly plant executive and feed manager of the mill at Paris, and Mr. Corman was an executive of the Decatur (Ill.) Milling Co. S. Werner, president of the Illinois Cereal Mills, Inc., also identified with the new company, will continue with the mill at Paris.

INDIANA

Lincoln, Ind.—The Lincoln Elvtr. Co. has installed a new hammer mill.—A. E. L.

Salem, Ind.—The William P. Carter flour mill, a landmark, and its equipment, were sold recently.

Portland, Ind.—Haynes Milling Co., Inc., has replaced a large hammer mill with a new one.—A. E. L.

New Palestine, Ind.—John W. Waltz, 78, former local grain dealer, died at his home in Arcadia Mar. 14.

De Motte, Ind.—The Bauman Feed Mill has been appointed distributor of Vitality Feeds in the local area.

Greentown, Ind.—Walker Bros. have opened a custom grinding department to supplement their present business.

Warren, Ind.—The Farmers Exchange recently installed a Blue Streak Hammermill with built-in magnetic separator.

Portland, Ind.—A new 1½-ton mixer has been added to the Oscar T. Finch feed mill, making two in service.—A. E. L.

Tipton, Ind.—The Tipton County Farm Buro has installed a Blue Streak Hammermill with built-in magnetic separator.

Chalmers, Ind.—The Chalmers Grain Co. entertained its stockholders at a banquet the evening of Mar. 22, after which officers were elected.

Galveston, Ind.—The Bahler Grain & Coal Co. has installed a Kelly Duplex Feed Mixer in its feed room, replacing a smaller mixer formerly in use.

Wheatfield, Ind.—H. E. Winkler has installed a half-ton electric feed mixer in his new feed department, furnished by the Kelley Duplex Mfg. Co.

Indianapolis, Ind.—The new Indiana food, drug and cosmetic act became a law, effective Mar. 6. Its provisions are identical with those of the Federal Food, Drug and Cosmetic Act.

Monticello, Ind.—The Farmers Elvtr. Co. has an electric manlift, installed by W. W. Pearson, driven by a special inclosed motor and remote controlled, operated from all floors and in cage, making it very convenient for all its employees.

Terre Haute, Ind.—Melton C. Strole, 67, wholesale grain dealer here for more than 30 years, died in a Lake City, Fla., hospital Mar. 15 following a heart attack. In company with Mrs. Strole, he had been spending the winter in Florida.

Indianapolis, Ind.—Government loan grain will not be assessed against the warehouseman, the State Tax Board having issued new instructions under which county assessors will obtain from the county A.A.A. com'te a list of farmers having grain in store and at what points.

Rensselaer, Ind.—The W. C. Babcock Grain Co. was awarded the contract for the work of dismantling the two bridges over the Iroquois River, one at Hazelden and the other at a point a half-mile south of Brook, and for the re-erection of the one now at Hazelden at the location of the one now south of Brook.

Scottsburg, Ind.—The Eberts Grain Co. was host to its managers, employees, and many feed dealers of this section at a meeting Mar. 20 sponsored by the McMillan Feed Mills. A turkey dinner with all the "trimmings" was served and a program of music and motion pictures with a short talk by Mr. McMillan, vice-pres. of the McMillan firm, was enjoyed.

Evansville, Ind.—The Federal Trade Commission has issued an order prohibiting two Michigan shippers from violating the brokerage restrictions of the Robinson-Patman act in the interstate sale of beans. Charles V. Herron of this city is charged with purchasing beans for his own account from the two shippers and received an allowance on each bag of beans in lieu of brokerage. Horrors! Did the beans contain more gas than usual?

Lafayette, Ind.—Forty-three persons attended the eighth grain grading school held at Purdue University Mar. 18 and 19, and manifested great interest in the sessions. These schools are made possible by the co-operation of the Indiana Grain Dealers Ass'n and the Federal Grain Supervision with the Agronomy Dept., School of Agri., Prof. F. E. Robbins in charge. Federal grain inspectors from Chicago, Toledo, Indianapolis, Louisville and Terre Haute assisted in the instructional work, placing emphasis on soft and hard wheats; the various damages, such as "sick" wheat; storage molds of corn; and "green" damage of soybeans. During the two day school, commercial gradings of oats, corn, soybeans and wheat were discussed, as well as combining grain, hybrid corn and cribbed corn problems, use of grading equipment with actual demonstrations made; moisture tests as determined by the various testers with demonstrations of each. On Tuesday evening a banquet was held, with a special speaker. Similar programs were announced for schools scheduled for Ft. Wayne, Mar. 21 and 22, in the Chamber of Commerce auditorium; Indianapolis, 5th floor of the Federal building, Mar. 25, 26; and Vincennes, 2nd floor of the Y. M. C. A. building, Mar. 28, 29.

Winchester, Ind.—Goodrich Bros. Co. has just completed a new garage, 54x60 ft. The building is of fire resistive construction and one section is equipped for repairing and servicing the company trucks.—A. E. L.

New Paris, Ind.—Dwiggins & Sons Alfalfa Mill, located in North Goshen, will move to New Paris early in April. A building site has been secured just northeast of town, where the old stock yards formerly was located, and a long term lease made with the Wabash Railroad on the ground. A storage plant, 330x50 ft., with a storage capacity of 3,000 tons, will be erected as well as a mill and drying shed. The plant will be ready for operation by June 1.

Fort Wayne, Ind.—The Northeastern Indiana Hay & Grain Dealers Ass'n held a dinner meeting in the Chamber of Commerce Bldg., Friday evening, Mar. 22, when its new officers were inducted into office. A. E. Hull, South Whitley, retiring president, called the meeting to order, and after a brief speech voicing his appreciation for the co-operation he had received, extended his best wishes to the incoming president, Avon Burk of Decatur, who then took charge of the meeting. Fred K. Sale, the state Ass'n's sec'y, was the principal speaker of the evening. His subject was "Why Elevator Men Should Test Grain Instead of Buying Mine-Run Grain," and he divided the topic into four major points: Value of the Grain Grading Schools; problems arising out of government entering the grain business; problems arising out of the advent of the grain combines; value of learning the cost of handling grain thru the elevators. Frank Pyle, Van Buren, president of the Farmers National Grain Dealers Ass'n, was present, and took part along with others in the evening's discussions, confining his remarks to the local conditions. C. G. Egly, retiring Ass'n sec'y, spoke on the subject, "Good Deeds." The meeting followed the grain grading school sponsored by the Indiana Grain Dealers Ass'n, which was largely attended and proved highly instructive and educational.—L. R. Rumsyre, sec'y Northeastern Indiana Hay & Grain Dealers Ass'n.

IOWA

Washington, Ia.—Burr B. Bordwell will install a feed mixer.

Davenport, Ia.—Henry Holscher, Davenport Elvtr. Co., is recovering from an attack of pneumonia.

Corydon, Ia.—Fred Cook of the Fred G. Cook Ice & Feed Co., has installed a larger mill for grinding farm feeds.

Diagonal, Ia.—The Goodale Feed & Produce Co. has moved to a new location to a building south of the Dalbey lumber yard.

Dunbridge, Ia.—Central Mills, Inc., is installing its second drier which will double the present capacity of the alfalfa meal plant.

Stockton, Ia.—Walter Henrichsen has been appointed manager of the Farmers Elvtr. Co., succeeding the late Walter Rutchtzke.

Monona, Ia.—A grain cleaner is being installed and other repairs are being made for the Farmers Elvtr. Co. by the T. E. Ibberson Co.

Dubuque, Ia.—The E. E. Frith Co., feed wholesalers, entertained 400 feed dealers at a program of boxing matches and dances March 18.

Alton, Ia.—At the recent annual meeting of the Farmers Mutual Co-op. Co., Mgr. Ralph Van Zyl reported a net profit of \$9,156.75 for the past year.—"Art" Torkelson.

Dows, Ia.—The Farmers Grain & Lumber Co. entertained 800 persons at an oyster supper the evening of Mar. 13, the occasion being the annual meeting of the company.

Albert City, Ia.—The Farmers Elvtr. Co. will increase the elevating capacity of its leg and will install a new Winter Head Drive. The T. E. Ibberson Co. is doing the work.

Lohrville, Ia.—Alba Swartz has been appointed manager of the Lohrville feed mill, replacing V. E. Bjorkman who has accepted a traveling position with Plymouth Products Co.

Clinton, Ia.—Louis Jilly, 60, chief engineer of The Clinton Co., passed away Mar. 10 in Florida. He had been connected with The Clinton Co. for the last 30 years.—"Art" Torkelson.

Blencoe, Ia.—A permit has been issued for construction of the Farmers Elvtr. Co.'s terminal elevator on the Missouri River. The project was planned early last year.—P. J. P.

500,000 bus. ELEVATOR at CHICAGO for Sale or Lease

25 concrete storage tanks located on the Pennsylvania Railroad in the Chicago Switching District.

Including approximately 125,000 sq. ft. of ground storage; 8,000 sq. ft. of concrete warehouse, open sheds, office, truck scale, switch tracks, etc.

Owners will build additional facilities if required.

Excellent opportunity for grain merchant or processor to obtain site to suit his particular needs at an attractive figure.

MATERIAL SERVICE CORPORATION

33 No. La Salle Street

Chicago, Illinois

Humboldt, Ia.—James Olson was re-elected president of the Farmers Co-operative Ass'n Mar. 12. Dividends of 10 per cent were paid. Tom Robinson is the manager.—"Art" Torkelson.

Des Moines, Ia.—The Spencer Kellogg Co. has let the contract to Jas. Stewart Corp. for a 550,000-bu. reinforced concrete annex which will give its elevator a storage capacity of 1,500,000 bus.

De War, Ia.—Roy A. Freed, who owns and operates the De War Elevator, is a candidate for supervisor on the Republican ticket. In 1938 he was beaten by 41 votes out of 944 cast in the district.—Art Torkelson.

Wellman, Ia.—Maplecrest Turkey Farms has completed plans for construction of an alfalfa dehydrating plant, the meal produced to be used in the firm's turkey feed. The plant will have a capacity of one ton per hour.

Ocheyedan, Ia.—The Ocheyedan Co-operative Elvtr. Co. recently entertained its customers and their families at a party when a motion picture was shown, prizes presented each family represented, and refreshments served.

Wellsburg, Ia.—Harm Frerichs of Frereichs & Snitzer is in a critical condition from pneumonia at the Mercy Hospital in Marshalltown. He has been placed in an oxygen tent. Grave fears are entertained for his recovery.—A. G. T.

Lost Nation, Ia.—The matter of reorganization of the Farmers Co-operative Co. was discussed at the annual stockholders' meeting held Mar. 13. The company's present charter expires next August. Carl Mohl is manager of the elevator.

Sanborn, Ia.—The Sanborn Co-operative Grain Co. recently purchased a 30-ton truck scale which will replace the platform scale now in use at the elevator. Installation will be made in April according to C. A. Hakeman, manager of the elevator.

Eldora, Ia.—Over 200 farmers were entertained by the Eldora Feed Mill and the Hubbard Milling Co. of Mankato at the local I. O. O. F. Hall recently when an interesting "talkie" of an educational nature on poultry and livestock feeding was shown.

Baxter, Ia.—The Baxter Grain & Coal Co. held a livestock feeders' and breeders' meeting at the high school Mar. 1, when animal nutrition and other feeder and breeder problems were discussed. Paul Waddle, manager of the grain company, was in charge of the evening's program.

Miles, Ia.—A modern, 43x53-ft. electrically operated feed mixing plant with an elevator 62 ft. high, soon will be erected here for John L. Franks & Co. The Younglove Const. Co. has been awarded the contract for the structure, which will be built southeast of the present feed warehouse.

Shenandoah, Ia.—Johnson Bros. Feed Mill has completed installation of the newest type molasses feed mixer for the making of sweet cattle feed. The new mixer works at high speeds and gives the mill the exact control of the percentage of molasses put in the feed up to over fifty per cent molasses.

Dumont, Ia.—The Farmers Grain Co. held its annual entertainment day at the elevator Mar. 16 when a representative of the Sargent Co. was present to assist those who wished advice concerning feeds and feeding of livestock. A program of instrumental music and songs was given, with many prizes awarded those present, and coffee and doughnuts were served throughout the day.

Lime Spring, Ia.—The old Foreston mill, pioneer water power industry built about the middle 1850's and used first as a saw mill, then a grist mill and later a flouring mill, was sold a few days ago by Sever Jacobson, owner, to a contractor at McIntire and is being taken down. The old mill is 4½ miles northeast of here, on the "Oneota" or Upper Iowa River and was one of the few water power mills remaining in the county.—A. G. T.

Sheldon, Ia.—Plans are under way for construction and operation of a co-operative soybean processing plant here. A meeting of officers of farmers elevators in the Big 4 counties appointed Bert Struyk, manager of the Sheldon Farmers Co-operative Ass'n as chairman, and M. M. Stientjes, manager of the Farmers Co-operative Ass'n at Hull as sec'y, to make further investigation of the feasibility of the project. A plant to handle from 500 to 1,000 bus. daily is under consideration at this time.

Faulkner, Ia.—Damages of \$128.65 were awarded Max Belz, manager of the Faulkner Grain Co., who was suing Charles Laipple, farmer, for failure to deliver 600 bus. of soybeans sold on contracts in June and October, 1939.

KANSAS

Leoti, Kan.—The Wichita Terminal Elvtr. Co. reported a small loss when its plant was damaged by recent high winds.

Bronson, Kan.—Mail addressed to the Farmers Co-operative Grain & Supply Co. has been returned by the post office marked "unknown."

Barnes, Kan.—Glen O. Ricard purchased Harry Augustus' interest in the Ricard & Augustus elevator and will continue the grain and feed business as in the past, under the name, Ricard Grain Co.

Wichita, Kan.—Ray P. Green, 51, treasurer of the Wichita Terminal Elvtr. Co., died Mar. 11 following a paralytic stroke suffered the preceding night. He had been associated with the company for 20 years.

Dodge City, Kan.—Kansas Grain, Feed and Seed Dealers' Ass'n will hold its convention at Salina, Kan., Tues. and Wed., May 21 and 22, immediately preceding the Missouri State convention.—J. F. Moyer, sec'y.

Newton, Kan.—Grant Morris paid a recent visit to his office in the Newton Milling & Elvtr. Co. plant, his first since last September when he underwent an operation. He hopes to be able to return to his work as manager soon.

Morganville, Kan.—All old machinery and shafting are being removed from the Gordon C. Mark Grain Co.'s old mill building and new equipment will be installed, to make it an up-to-date grain elevator. L. B. Allen, manager, is supervising the work.

Lewis, Kan.—A refrigerator and locker storage plant is being installed by the Farmers Co-operative Elvtr. Co. adjacent to its elevator. John Holmes, manager, stated the new plant will be equipped with chilling, processing and sharp freezing rooms. Modern, sanitary steel lockers will be installed.

Fredonia, Kan.—The 15,000-bu. cribbed type elevator with 80-ft. warehouse, scale and office have been completed for the W. S. Smith Grain Co. here. The A. F. Roberts Const. Co., contractor, finished work on the new plant this week. Mr. Smith is a prominent grain dealer of Neodesha, and recently purchased the ground along the Missouri-Pacific right of way on which the new elevator is located.

Hutchinson, Kan.—Interested groups met here Mar. 13 and discussed ways and means to encourage legislation to license and regulate the itinerant trucker. It was pointed out several other states have enacted and have in practice laws regulating this type of merchant, which are proving most satisfactory in that such merchants complying under such regulatory laws have become dependable merchants, the law offering to consumers the protection which they did not enjoy before from such agents of commerce. J. E. Ogren, president of Kansas Grain, Feed & Seed Dealers Ass'n, represented his Ass'n at the meeting.

Phillipsburg, Kan.—Paul Bailey and Bryant Lynch, new owners of the Farmers Union Jobbing Ass'n elevator, have formed the Phillips County Grain Co., and have started to modernize the property. Earl Cox, manager of the elevator under the former ownership, will continue in that capacity with the new owners. A 75-ft. long warehouse will be built to form a south wing of the elevator, and a new feed mixer, fanning mill and feed grinder will be installed. Plans have been made to manufacture prepared feeds and standard formulas will be retained at all times. Custom grinding will be a specialty. A new office will be built later and a new scale installed.

KENTUCKY

Nicholasville, Ky.—The C. T. Ashley Co. sustained a small loss caused by recent high winds.

Winchester, Ky.—The Woolcott flour mill, Lexington, has leased the Kennedy warehouse and will open a distribution plant for flour, feed and mill supplies April 1.

Somersett, Ky.—Earl McAlpin has been employed by Claude Barker as manager of the Farmers Milling Co. at Columbia Crossing, recently leased by Mr. Barker from M. B. Stephens.

MARYLAND

Maugansville, Md.—The Maugansville Elvtr. & Lumber Co. is constructing a \$40,000 steel and concrete elevator on the site of the plant recently destroyed by fire.

Baltimore, Md.—Luther M. Jackson, 83, engaged in the grain and flour business here since 1886, died Mar. 11 after a short illness. He was a member of the firm of Robinson & Jackson, but had retired from active business since the first of the year. Mr. Jackson was the oldest member of the Baltimore Chamber of Commerce, having become a member of that organization in 1886 when it was known as the Baltimore Corn & Flour Exchange. He had served on numerous com'ites of the Chamber of Commerce.

MICHIGAN

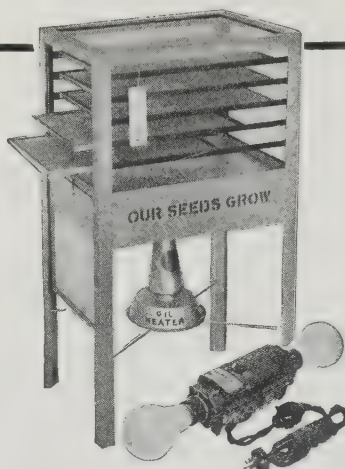
Bridgeport, Mich.—The Farmers Produce Co. has been dissolved.

Sebewaing, Mich.—The old John C. Liken & Co. flour mill is being dismantled and razed.

Grand Rapids, Mich.—A fire in an electric motor on Feb. 22 caused some damage to the VanEss & Schreuder plant.

Chesaning, Mich.—Elmer A. Beamer, state agricultural commissioner, has revoked the license of the Chesaning Farmers Elvtr. Co., the first revocation since his recent announcement of plans to enforce rigidly the new state farm produce storage law. He accused the company of two violations of the law, failure to submit true statements concerning its business in the four months ended Jan. 31, and failure to issue warehouse receipts in the form approved by the state. Individuals who had stored their produce in the company's elevator will suffer no loss, Beamer stated, because the company has turned over to the agriculture department warehouse receipts ample to cover the holdings.

TEST ALL KIND & SIZES OF SEED



... with the SHO-GRO GERMINATOR. This germinator reduces the normal germination period from 1 to 3 days. It is efficient, economical and easy to operate.

PRICES F.O.B. CHICAGO

No. 86—Sho-Gro, with Kerosene Heating Unit	\$22.00
No. 88—Sho-Gro, with Thermostatically Controlled Heating Unit	\$32.00
No. 95—Thermostatic Electric Heating Unit, only. Complete	\$12.00

SEED TRADE REPORTING BUREAU, INC.

620 BROOKS BLDG.

CHICAGO, ILL.

Manton, Mich.—Frank N. Clark, operator of the Manton Grain & Feed Elevator, died Feb. 15.

Melvindale, Mich.—Darling & Co., poultry feed manufacturers, will expand its plant. A \$150,000 expansion program has been planned.

Henderson, Mich.—Extensive improvements on the local elevator recently purchased by the Michigan Grain & Bean Co. are well under way and the structure is being converted into one of the most modern and convenient plants in the field.

MINNESOTA

Delhi, Minn.—A Winter Head Drive has been installed in the elevator of the Farmers Elvtr. Co.

Doran, Minn.—The Kent-Doran Grain Co. is installing a new special type feed mixer. The T. E. Ibberson Co. is doing the work.

Duluth, Minn.—O. E. Martin is back on the Board of Trade floor again after an absence of a month on account of illness.—F. G. C.

Franklin, Minn.—Walter Caven, proprietor and manager of the Caven Elevator, and trustee of the city council, died Mar. 13 of a heart attack.

Winthrop, Minn.—A new Strong-Scott Head Drive was installed in the Pacific Grain Co.'s elevator. The T. E. Ibberson Co. had the contract.

Oklee, Minn.—Remodeling of elevator No. 2 of the Oklee Farmers Co-operative Elvtr. Ass'n has been completed and the elevator has been reopened.

Wells, Minn.—A 20-ton Fairbanks Dump Scale, dump grates, overhead folding doors, supplied by R. R. Howell Co. have been installed in the elevator of the Farmers Elvtr. Co.

Duluth, Minn.—The Duluth Board of Trade membership No. 16, issued to G. G. Barnum, Feb. 14, 1883, oldest outstanding certificate, has been posted for transfer to B. B. Wood.—F. G. C.

Jackson, Minn.—The Fleischmann Malting Co. has installed a Gerber Improved Double Distributor, all steel spouting, and Calumet Cups in its local elevator. R. R. Howell Co. supplied the equipment.

Minneapolis, Minn.—F. M. Rosekrans, Jr., who has been local manager for Chapin & Co., will do business after April 1 under his own name. He has been specializing on dried milks, on a brokerage basis, and also handles millfeed.

Heron Lake, Minn.—The Farmers Elvtr. Co. recently purchased the St. John & Son elevator, taking possession Mar. 15. It will close its former elevator except in rushed seasons, and will use the building principally for storage.

Minneapolis, Minn.—Five men, prominent in the grain industries and milling of the city, took part in the half-hour round table discussion of the subject, "Minneapolis as a Milling Center Faces a New Decade" over radio station WTCN at 9 p. m. recently. Presented on the broadcast were F. Peavey Heffelfinger; Donald D. Davis; John S. Pillsbury; T. L. Daniels, and W. C. Helm.

Blooming Prairie, Minn.—The advisability of locating a soybean processing plant here is being investigated by a com'te recently appointed for that purpose by the Commercial Club. Preliminary reports have been made and the management of the Farmers Elvtr. Co. has been consulted as to the desirability of taking over the management of such a plant here in the event it is organized.

Ashby, Minn.—The Ashby Farmers Co-operative Elvtr. Co. recently completed additions and improvements at its plant, installing a new Strong-Scott one-ton Mixer and corn cutting equipment. The T. E. Ibberson Co. did the work.

Hutchinson, Minn.—A dust explosion in the upper portions of the new feed grinding addition at the Farmers Co-operative Elvtr. Ass'n elevator late Mar. 7 blew loose the roof, bulged out the south side of the structure as it rocked the entire building, and a stubborn fire, following the blast, added to the destruction of the plant and its contents. Fortunately no one was injured. Manager Brandt stated it will be necessary to take down and reconstruct the greater portion of the structure. Repair work is progressing rapidly.

Bird Island, Minn.—The Farmers Elvtr. Co.'s new elevator, to be built by the J. H. Fisch Co., will be erected on a reinforced concrete slab, and will be 34x39 ft. on the ground, cribbed to a height of 65 ft. Its 22 bins will be so arranged that 8 bins will feed directly to the driveway. A 14 ft. work floor 15 ft. high; two stands of elevator legs with a capacity of 3,000 bus. each; head drives; a 27 duct double Gerber Distributor with steel spouting; a 10-bu. Richardson Automatic Shipping Scale; cast iron turn heads on all bins; steel boot tank, 29x10-12 ft. deep, reinforced inside and out with angles and slope anchors, will be some of the features of the elevator. The driveway will be 16x65 ft., with a 30-ton 10x34 ft. platform Fairbanks-Morse Scale, and 76 inch telescoping Strong-Scott Dump; the scale beam will be in the office. The driveway will have overhead doors on both ends. The 16x40 ft. office will be divided into three rooms with a fire-proof vault in basement, and will be complete with hot air heating plant and all plumbing facilities. The office proper will be finished with colored Masonite planking and beveled tile, with one large plate glass window for display purposes. A 20-ton outside scale will be installed there, with its beam in the office. A 16x22 ft. warehouse, 16x24 ft. feed mill and 12x32 ft. driveway with four section folding doors and Richards-Wilcox Track, will also be constructed. An attrition mill, dry feed mixer and one leg will be installed in the mill, the building, however, being designed with the expectation of adding more units and more machinery as the demand arises. The entire plant is to be iron clad with 1½-inch corrugated siding and standing seam roofing. When completed, the present plant will be taken down. Officers of the Farmers Elvtr. Co. are Peter Weiss, pres., H. Baumgartner, sec'y, and F. J. Ryan, manager.

MISSOURI

Beaufort, Mo.—The John C. Birkman mill was damaged by fire Feb. 16, started from a spark from the exhaust of a tractor.

Pilot Grove, Mo.—An overheated motor which ignited a coat of grease in the grinding room at the Farmers Elvtr. Co.'s elevator Mar. 6 caused a small amount of damage. The fire was brought under control by employees.

St. Louis, Mo.—All officers were re-elected for 1940 by the St. Louis Millers' Club at its meeting Mar. 7 at the Statler Hotel. Roger A. Leonhardt is pres.; Andrew Bauer, vice-pres.; Walter Krings, sec'y-treas. New members were R. L. Parker, Aderton Samuel, Wm. G. Catron and J. H. Wack.

Aurora, Mo.—The Eighth United States Circuit Court of Appeals has entered a consent decree providing for the payment of \$35,000 to the former employees of the Majestic flour mill, which was destroyed by fire last year. The mill workers were on strike for many months. The decree settles a National Labor Relations demand.—P. J. P.

East Prairie, Mo.—The East Prairie Milling Co. is building a 5,000-bu. wheat storage warehouse, 32x54 ft., to be metal clad, on concrete foundation.—P. J. P.—Machinery for the manufacture of corn meal and all kinds of feed will be installed. The office for the new plant has been completed and a new Fairbanks Scale has been installed. In addition to the new building, the company operates a large grain elevator on the site, which was saved at the time fire destroyed the feed mill and warehouse last December.

KANSAS CITY LETTER

J. F. Krishe of B. C. Christopher & Co., has applied for membership in the Kansas City Board of Trade on transfer from the late Stanley Christopher, Jr.

Curry S. Hopper, formerly with Lamson Bros. & Co., has joined J. S. Bache & Co. as floor representative on the Kansas City Board of Trade. Wallace N. Neil, formerly with Davis-Noland-Merrill Grain Co., succeeded him as floor representative for Lamson Bros. & Co.

Thomson & McKinnon opened their new branch office in the Board of Trade Building Mar. 11, with Elliott L. Love in charge. Associated with him is Robert J. Thresher who has been the company's representative in the trading floor here for about five years. The new firm will have private wire connections in Nebraska, Missouri, Kansas and Iowa, serving a wide territory in the Southwest, and has facilities in all leading grain marketing centers.

NEBRASKA

Alexandria, Neb.—The McDowell Milling Co. has been leased by Al Hoffman and is operated under the name of Alexandria Mills.

Crawford, Neb.—Mail addressed to the Farmers Co-operative Grain Co. has been returned by the post office marked "unclaimed."

Wallace, Neb.—The O. M. Kellogg Grain Co. suffered a small fire loss at its plant recently, due to an electric light bulb being broken by a stream of grain.

Falls City, Neb.—Old Muddy Mill, that has stood sentinel over the Old Muddy channel south of here for three-quarters of a century, is being demolished to make room for the improved highway.

Alliance, Neb.—A hearing on the proposed alfalfa weevil quarantine for western Nebraska was held Mar. 12, by L. M. Gates, state entomologist. Counties affected are Dawes, Scotts Bluff and parts of Morrill, Box Butte and Sheridan.

Ainsworth, Neb.—An early morning fire Mar. 11 caused considerable damage to building and stock of the Rogers Feed & Grain Co. The blaze is thought to have been caused by a short circuit in the wiring connected to a small box in which an electric bulb had been placed to keep some young chicks warm.

Concord, Neb.—W. S. Hart, 70, former Omaha grain man and a pioneer resident of northeast Nebraska, died of a cerebral hemorrhage Mar. 7 at his home here. He had been associated as manager with the Crowell Elvtr. Co. for the last 10 years. From 1913 to 1930 he had been engaged in the grain business at Omaha and his son, W. Doyle Hart, grain man, resides in that city.

Seward, Neb.—The suit of the Seward City Mills against seven insurance companies to recover on a fire last June 11, was dismissed by stipulation in Federal Court Mar. 16. The stipulation stated that the suits had been settled out of court. One suit was to recover \$23,554.60 for damage estimated at \$37,000 (an R.F.C. loan accounting for the balance), and the other to recover \$6,016.51 on stock destroyed.

Brownville, Neb.—The terminal elevator to be constructed here on the Missouri River site for Hart-Bartlett-Sturtevant, Inc., will contain facilities for handling rail, truck and river shipments, just as will the proposed Nebraska City million-bu. terminal which the company is interested in leasing. The local elevator will have a 90,000-bu. capacity. Plans for the structure have been sent to the U. S. Engineers for approval.—P. J. P.

Hay Springs, Neb.—Construction of the Farmers Elvtr. Co.'s 10,000-bu. elevator, with attached feed mill, warehouse, office and scale, will start within a few days. The elevator, of stud type, will be covered with galvanized iron. A. F. Roberts Const. Co. has the contract. At a recent meeting of the village board, a remonstrance petition was presented, expressing sentiment against the construction of the elevator on the site north of the tracks, east of the present foreman's house. The petition was circulated in accordance with a recent notice of easement grant which was published.

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Nebraska City, Neb.—A permit has been issued for construction of the 1,000,000-bu. terminal elevator to be built here on the Missouri River, application for which was made in February. The project was divided into five W.P.A. projects when request was made.—P. J. P.—Approved by state and regional officials, the application was forwarded Mar. 14 to Washington for final approval, and is expected to be decided within the next two weeks.

NEW ENGLAND

Providence, R. I.—Wm. H. Adams & Son, Inc., recently filed papers for dissolution.

West Warwick, R. I.—The Forsyth Grain & Coal, Inc., has been organized by Ralph Rondono, Michael Adeo and John Enos.

Tiverton, R. I.—David W. Simmons, who continued to operate a grist mill here after he reached the age of 90 years, died recently at the age of 97.

Fitchburg, Mass.—The United Co-operative Farmers have been granted a permit to erect a 65-foot grain elevator at an estimated cost of \$10,000.—G. H. J.

NEW JERSEY

Jersey City, N. J.—Carscallen & Cassidy Co. have been incorporated, capital, \$200,000, to deal in grain.

NEW MEXICO

Albuquerque, N. M.—Ravel Bros. held the formal opening of their new feed and seed plant Mar. 2. The plant and store, containing 18,000 sq. ft. of floor space, is described as the finest and most modern in the southwest. Arthur and Louis Ravel are owners of the firm, which deals wholesale and retail in feed, hay, grains, stock and poultry remedies and supplies, fertilizer and insecticides.

NEW YORK

Canaseraga, N. Y.—A warehouse owned by Armstrong & Rowan was damaged badly by fire of unknown origin Mar. 12.

New York, N. Y.—The New York Produce Exchange will establish a futures market for trading in soybean oil. A contract will consist of 60,000 lbs. of oil, delivered in New York on an f.o.b. bonded warehouse basis.

Oswego, N. Y.—Capacity operation of the Oswego state elevator during the coming season of navigation is expected by state officials, from inquiries which have been received by the State Dept. of Public Works, in Albany, and it is possible that several concerns in addition to Cargill, Inc., who operates the Albany port elevator, will be shipping grain thru Oswego to Albany and New York.

Narrowsburg, N.Y.—J. C. Branning & Co. plan to erect a mill and warehouse this coming fall, necessitated by the expansion of their business. The new structure will be located on the site of the Dairylea Creameries along the Erie tracks and will be 60x90 ft. with a railroad frontage of the same dimension. It will be built of corrugated iron and equipped with all of the latest feed manufacturing machinery for blending of feed and grain rations. A display room will be included showing how all rations are formulated before being mixed into balanced rations.

NORTH DAKOTA

Temvik, N. D.—David Calquhoun, Sr., 62, retired grain dealer, died Mar. 6.

New Rockford, N. D.—Charles I. Hartson, 79, a pioneer elevator manager here, died at Hamilton, Mont.

Foxholm, N. D.—Aug. Arndt, manager of the Farmers Elvtr. Co., is confined to a hospital in Minot, N. D.

Cavalier, N. D.—Fred Harris, 71, president of the Cavalier Milling Co. until 1938, died Feb. 11 following a long illness.

Sydney, N. D.—Winter-Truesdell-Diercks Co. is having the T. E. Ibberson Co. install a new Carter Cleaner in its elevator.

Grand Forks, N. D.—F. W. Wolff will open offices in the Clifford building for the Farmers Union Grain Terminals Ass'n.

Fargo, N. D.—New members enrolled by the Farmers Grain Dealers Ass'n of North Dakota include the Farmers Union Elvtr. Co., Hebron; Farmers Union Elvtr. & Merc. Co., Farkirk; and Farmers Elvtr. Co., McClusky, N. D.

Carrington, N. D.—Fire destroyed the \$10,000 double-unit Osborne-McMillan Elvtr. Co. elevator early Mar. 14, in which 26,000 bus. of wheat, oats and barley were stored. The adjoining office, feed warehouse and coal sheds were saved. The plant, which had been enlarged and modernized two years ago, will be rebuilt.

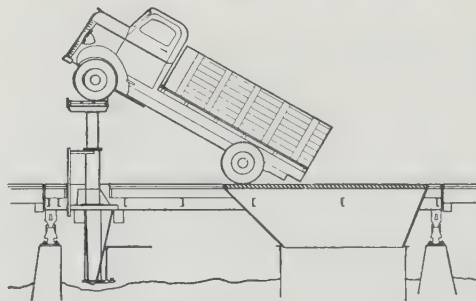
Lisbon, N. D.—The Farmers Union Grain Terminal Ass'n seeks to organize a co-operative elevator here with F. S. A. help. A. T. Hilden, former manager of the Lisbon Monarch elevator, addressed a meeting of farmers assembled to consider the project, and urged those present to support the venture. A com'ite was appointed to promote the movement.

Bismarck, N. D.—The Monarch Elevators of Minneapolis awarded contract to the T. E. Ibberson Co. for the erection of a 35,000-bu. elevator to be built here, adjacent to the company's present seed and feed plant. All 15 bins will have hopper bottoms. The elevator will have a slab foundation and will be covered with galvanized iron. A modern head drive will be used in the leg, which will be fitted with Calumet Buckets and a Strong-Scott manlift and a modern grain cleaner will be installed. A 20x38-ft. dumpscale will be located in the driveway with air dumps for receiving purposes, a 100-bu. hopper scale will be used for shipping. This elevator will be built adjacent to the owner's present seed and feed plant.

OHIO

Fostoria, O.—It is expected that Swift & Co.'s new soybean plant will be ready for operation April 1 according to S. D. Hollitt, local manager.

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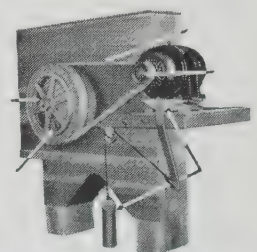
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Elevator Cups

Superior D. P. Greater capacity at an even speed. Their design permits closer spacing than ordinary cups and assure complete discharge.

Superior C. C. Maximum efficiency in picking up material in the boot—speeds can be varied greatly—can be spaced continuous—discharge at higher rate of speed.



Pivoted Motor Base Head Drive

The only head drive that delivers more than 99% of your motor's power to the head shaft. Write for particulars.

Wooster, O.—Wooster Feed Mfg. Co. plant, including stored grain, was damaged by fire Mar. 15.

Moulton, O.—Detjen Grain Co. recently bought three platform truck scales of the Sidney Grain Machry Co.

Lucasville, O.—The mill and elevator of the Scioto Valley Farm Buro Co-operative Ass'n was burned Mar. 22.

Huron, O.—Harold Ohlemacher, living near Sandusky, has been appointed manager of the mill and elevator of the Avery Elvtr. & Grain Co.

Mt. Blanchard, O.—An addition has been built to the elevator of the Mt. Blanchard Elvtr. Co. to house a new grinder and other machinery recently added.

Hoytville, O.—Sheridan Leatherman, 74, retired manager of the Hoytville Grain Co. and well known in this vicinity, died Mar. 13, at his home where he had been bedfast for three weeks. He retired from his position with the grain company last April.

Ashland, O.—The J. L. Donley & Bro. Elevator was damaged by fire Mar. 8, started from a defective flue. The blaze was discovered in the seed cleaning house and was confined to the side of the building, near the chimney. Business was suspended for about two hours.

Bowling Green, O.—Richard S. Sheldon, 61, manager of the Mennel Milling Co., died Mar. 8, at his home in Toledo, after a week's illness. He was formerly manager of the Royce & Coon Grain Co. elevator, continuing in that position when it became the Mennel Milling Co., his management covering 10 years.

Lewisburg, O.—Robert Floyd and William Rice have acquired the interest of a third partner, Willard Floyd, brother of Robert, in the Floyd Milling & Grain Co. The company was organized last May when the three purchased the grain elevator of C. W. Pontius and merged the flour mill, which had been operated by Willard Floyd, with the elevator business under the firm name. Robert Floyd will continue as manager and Mr. Rice in his usual capacity as supervisor of the elevator. Willard Floyd will devote his time to the moving picture business in which he is interested, working part time in the mill.

Fort Loramie, O.—Henry E. Landman, long identified with the milling industry in this area, has opened the Ft. Loramie mill for the manufacture of flour and sale of grain and feeds following completion of an extensive remodeling program, started after the purchase of the mill last December. For 22 years Mr. Landman owned and operated the Landman Milling Co. in St. Henry. After selling the plant in 1937 he continued to operate it for the new owner until last May when illness forced him to resign. He submitted to surgery on his eyes later. He also formerly owned and operated the Landman Milling & Elvtr. Co. at Maria Stein.

Arlington, O.—Lee H. Gillespie has completed the remodeling of the plant he purchased last June and held a formal opening of the elevator and feed mill all day Saturday, Mar. 16, at its location along the Northern Ohio Railroad. Features of the day were free lunch, when visitors were given all the pancakes they could eat; sausage and coffee; 300 lbs. of free grinding for each customer; all feed mixing free; distribution of a number of prizes. When Mr. Gillespie purchased the plant, moderate changes were planned, with a quick start of operation. These plans, however, gave way to a general and complete remodeling and re-vamping program and installation of new, modern machinery, now completed. Included in new equipment is a 94-h.p. diesel engine for power; hopper scales for weighing, grinding and mixing; 15-ton, 30-ft., Fairbanks Truck Scale; large capacity S-3 Hammer Mill; one-ton master mixer; 500-bu. capacity corn sheller; 1,000-bu. rolling grain cleaner and separator. Ted Smith has been engaged to manage the plant; John Waxler will have charge of grinding and mixing.

Fremont, O.—Howard Zimmerman has filed a petition against the Fremont Elvtr. Co., seeking an order from the court for the sale of property for the payment of delinquent taxes.

Port William, O.—W. O. Beam & Son recently installed some new equipment including a "Sidney" Corn Sheller, drags, new style revolving screen corn cleaner, elevators, motors and drives, all furnished by the Sidney Grain Machry Co.

Willard, O.—The Willard Farmers Exchange Co. increased its business in 1939 \$12,000 over the preceding year according to the report given at the company's annual meeting, held recently. J. F. Slattery is manager of the elevator.

TOLEDO LETTER

W. D. Hughes, assistant manager of the National Milling Co., is confined to the Toledo Hospital where he underwent an operation for appendicitis Mar. 16.

Harold Anderson, owner of the Anderson Elevator, Maumee, returned recently from Venice, Fla., where he visited his father who has been confined to a hospital. The elder Mr. Anderson, who has been in Florida with his wife since Christmas, is reported well on the mend.

The Toledo Board of Trade recently renewed for a long term of years its lease on the third floor trading room and offices in the Produce Exchange Building. Except for a comparatively short period the Board has been in this building since 1876 when the Board was first organized. Alfred E. Schultz, sec'y of the Board, announced that the trading room and executive offices will be remodeled.

OKLAHOMA

Hugo, Okla.—The Hugo Milling Co. sustained an electrical damage loss at its plant early in March.

Edith, Okla.—Dan Mock has purchased the local 8,000-bu. elevator. He plans to take down the building and move it to another location before next harvest.

Marshall, Okla.—The E. R. Humphrey Grain Co.'s 25,000-bu. elevator, built to replace the one destroyed by fire last October, has been completed. A. F. Roberts Const. Co. had the contract.

Enid, Okla.—Oklahoma Grain & Feed Dealers Ass'n will hold its 44th annual convention in Enid on May 15 and 16, with headquarters at the Youngblood Hotel. The program com'te is working on an excellent entertainment for the occasion. E. R. Humphrey is sec'y pro. tem. of the Ass'n.

Newkirk, Okla.—The Farmers Elvtr. & Supply Co. will construct a modern fire-proof elevator here to replace the one destroyed by fire Mar. 3. Plans for the new structure were made at the directors' meeting Mar. 16, the elevator to be completed in time to handle the wheat harvest next June. In the meantime the company will use its north elevator as a temporary headquarters. Jake Bergholt is manager of the plant.

El Reno, Okla.—The Canadian Mill & Elvtr. Co. has sued for return of \$5,453.06 in 1939 taxes paid under protest. The mill alleges in its petition that, after the county excise board held a hearing on the valuations for the 1939 taxes and accepted the contentions of the company, County Assessor Sam Hulbert has arbitrarily increased the figure without following the required procedure of appealing the matter to the state court of tax review. At the time the new mill was constructed here to replace the one destroyed by fire in 1936, the citizens of El Reno voted to exempt the structure from city taxes for a period of five years. When the valuations were made in 1939 the excise board set the figure at \$18,500 for merchandise and personal property, but when the tax rolls were certified to the county treasurer the latter item was increased to \$158,720. The mill paid the taxes under protest and now seeks recovery.

Oklahoma City, Okla.—Superior Feed Mills, Inc., recently completed and is now occupying its air-conditioned office building, adjacent to the new elevator and feed plant constructed during recent months, building of which started last September. This company manufactures Dandy Kandy, sweet feed cattle fattener.

Nash, Okla.—Leo Greer, manager of the Nash Equity Exchange, stated that, in face of the poor prospects of the wheat crop, it is doubtful if his company will go ahead with plans to build a 100,000-bu. annex, as was voted at the annual meeting held recently. A survey of the area would indicate that crop conditions will be, at best, only about 40 per cent of normal, he stated, which fact the company has about decided would not justify construction at this time.

PACIFIC NORTHWEST

Portland, Ore.—The annual golf tournament of the Portland Grain Exchange was set for Mar. 21.

Kennewick, Wash.—The new Grange warehouse was formally opened with a program of entertainment and dancing Mar. 9.

Portland, Ore.—The annual convention of the Oregon Feed Dealers Ass'n will be held at the Multnomah Hotel on Friday, May 24.

Walla Walla, Wash.—The Walla Walla Grain Growers is converting the grain elevator at Fourth and Reese into a wheat warehouse.

Pendleton, Ore.—A meeting of local grain men was held here recently to make plans for the Pacific Northwest Grain Dealers Ass'n convention to be held here June 7.

Marlin, Wash.—The Krupp Union Warehouse Co. will build an elevator, 44 ft. square, with 100,000 bus. of wheat capacity. It is expected to have the new structure finished by June 15.

Asotin, Wash.—Harmer Robeson has bought his partner's interest in the local mill and Frank H. Stephenson, after a milling career of fifty years, is retiring. The men moved the mill here from Jerry several years ago.

Van Syde (Helix p. o.), Ore.—The Farmers Mutual Warehouse Co., with head offices at Helix, will build a 150,000-bu. elevator here, to consist of 28 bins, two legs, electrically driven and modern in every respect. The Hogenson Const. Co. has the contract.

Seattle, Wash.—Rail rates on hay shipments from eastern Washington points to western Washington have been reduced 50c a ton, according to information from J. G. Wilson, sec'y of the Pacific Northwest Feed Ass'n. This reduction, it is explained, was occasioned by truck competition.

Blakeley Station (Adams p. o.), Ore.—A 1,500,000-bu. elevator will be built here for S. R. Thompson of Pendleton, by the Hogenson Const. Co., to replace the one swept by fire Feb. 16. It will consist of 28 bins, two legs, and be electrically driven and modern thruout. Construction will start at once.

Orofino, Ida.—Equipment for manufacturing prepared feeds, including egg and baby chick mashers, dairy, calf and hog supplement feeds, has been installed in the Orofino Rochdale Co. warehouse of which Frederick Richardson is manager. A hammermill, vertical feed mixer, and scale were among the new equipment.

Corvallis, Ore.—F. H. Denson's new building, constructed on South Seventh St. in easy access to the railroad, has been completed, and his feed and seed business has been moved there. Formal opening of the plant was held Mar. 20, when the public was invited to call, inspect the plant and enjoy waffles and a movie.

Ritzville, Wash.—The O'Neill Grain Co. has started construction of a 35,000-bu. elevator at its plant on Division and the railroad tracks. Fourteen bins will be erected, each 40 ft. high and 30x30 ft. in size. Adolph Weber has the contract and expects to have the job completed within two months. H. C. Gemberling of Spokane is manager of the company.

Pampa (Lacrosse p. o.), Wash.—The Lacrosse Grain Growers let the contract for the local elevator to W. J. Morrell and work on the structure will begin at once. Work on the company's elevators at Hay and Lacrosse is progressing rapidly, foundations being in for both houses and construction of cribbing started, Mr. Morrell having the contract for these jobs also.

STRATTON GRAIN CO.

MILWAUKEE, WIS.

CHICAGO, ILL.

SPRINGFIELD, O.

ST. JOSEPH, MO.

NEW YORK, N. Y.

MILL FEEDS — FEED PRODUCTS — BY-PRODUCTS

Consignments and Future Orders Solicited

Harrington, Wash.—The old Harrington Flour Mill building is being converted into a bulk grain elevator by the Odessa Union Warehouse Co. The old sacked-grain warehouse west of the mill building has been taken down and suitable material thus obtained is being used in the remodeling process. The old floors of the mill have been removed and the structure skeletonized to facilitate the conversion scheme. Eighty sticks of dynamite were used to blast a hole in the solid rock on the east side of the building, for a pit in which loose grain may be dumped.

Sprague, Wash.—Sprague Grain Growers, Inc., recently posted to its members a letter giving the history of the organization since its inception in 1930 with an actual paid in cash capital of \$850, to its present capital and surplus account of \$29,527.38. Starting with rented storage, the company now has bulk storage for 377,000 bus. of grain and sack storage space for an additional 184,500. Since its beginning the corporation has earned a net average of slightly over \$8,000 per year. The spread between local and coast quotations has been lowered by some two to three cents and handling charges reduced from \$1.25 per ton to \$1.00.

Portland, Ore.—Effective Mar. 19, the Seattle and Portland Grain Exchanges have adopted the following schedules of discounts, differentials, and service charges: Premium for sacked wheat reduced from 3c to 2½c per bu.; bad order sacks, reduced from 5c to 4c; resacking charges, reduced from 10c to 8c. The rules as amended now read: Bulk wheat differentials: All trading shall be done on the basis of bulk wheat. Sacked wheat delivered in standard wheat sacks, delivered in lieu of bulk wheat shall be applicable on contracts at 2½c premium per bushel over bulk wheat. Resacking: The charge for resacking shall be 8c per sack. Sacks, turned, bad order, commodity branded or sacks other than standard wheat sacks shall be subject to a discount of 4c per sack. Coarse grains were unchanged.

PENNSYLVANIA

Littlestown, Pa.—John E. Gentzler has opened the Keystone Milling Co. here.

Meshoppen, Pa.—Harry Carter has sold his feed and flour mill to the Kintner Milling Co., North Mehoopany, Pa.

Johnstown, Pa.—George F. Lingenfelter, 78, operator of the Johnstown Milling Co. for the past 27 years, died recently.

SOUTH DAKOTA

Chancellor, S. D.—Fire slightly damaged the Lensch Grain Co. elevator recently.

Colman, S. D.—The Farmers Elevtr. Co. is operating its new 1½-ton Strong-Scott Mixer, recently installed by the T. E. Ibberson Co.

Avon, S. D.—Henry D. Gliedd, 72, died at his home after a brief illness. He was engaged in the grain and stock business here for many years.

Garretson, S. D.—The Farmers Co-operative Grain & Supply Co. has started the operation of its new feed mill, designed and built by the T. E. Ibberson Co. A Strong-Scott Attrition Mill, with two 30-h.p. motors and a Strong-Scott Mixer, were part of the equipment used. The warehouse was provided with necessary legs and unloading driveway. The whole plant is operated with motors.

SOUTHEAST

Dagsboro, Del.—Daisey & Williams recently installed a new feed mixer.

Atlanta, Ga.—James W. Feeney, 71, local grain merchant, died early Mar. 15, following a paralytic stroke suffered earlier in the week. He had been in business here for more than 30 years.

Red Level, Ala.—W. G. Foshee has opened the Foshee Milling Co. and will manufacture all kinds of feeds. All new and modern machinery has been installed and the mill is running at full capacity.

TENNESSEE

Dresden, Tenn.—Fire Mar. 5 damaged the Smith Milling Co. plant.

Dayton, Tenn.—C. E. Boyd recently opened his new feed store here.

TEXAS

Galveston, Tex.—Young Davitte, formerly in the grain business at Fort Worth, and more recently in government service, has become associated with the Texas Star Flour Mills.

Fort Worth, Tex.—The 43rd annual convention of the Texas Grain & Feed Dealers Ass'n will be held in Fort Worth May 10, 11 and for the first time will be preceded by a grain and seed grading school for dealers and elevator employees, to be held on May 9.

Canadian, Tex.—The Farmers Elevtr. Co. is building a crib type elevator with feed mill and warehouse, 75x150 ft. attached. The elevator will have a capacity of 25,000 bus. and will be covered with corrugated galvanized iron. A. F. Roberts Const. Co. has the contract.

Houston, Tex.—A grain cooler will be constructed outside of the Public Elevator, J. Russell Wait, port director, has announced. Bids on the cooler, a safety measure, are being taken, as are also those on copper sheets to be used to case the elevator legs which are now of steel. Mr. Wait stated it was his opinion

that the spark that caused the explosion last year originated in one of the boots when a steel bucket struck the steel lining.

UTAH

Murray, Utah—LeRoy Turpin's chicken feed mill on Mar. 5 was destroyed by fire.

Brigham City, Utah—A small fire loss occurred in the Jensen Bros. Milling & Elevtr. Co. plant recently.

Salt Lake City, Utah—The Latter-Day Saints Church Welfare Program is building a 300,000-bu. concrete elevator here, to be used for storage of wheat held on reserve for distribution to the Latter-Day Saints needy in the western part of the U. S. if the urgent need for this should ever materialize. Ryberg Bros. have the contract and are employing unemployed members of this church as well as other residents for the work, it being a make-work project. McKenzie-Hague Co. are architects and engineers for the structure. Sterling H. Nelson Co. has charge of grain operations of this charitable organization.

Be It Small or Be It Large

IBBERSON efficiency backed by 60 years' experience in building and remodeling Grain Elevators and Feed Mills of all sizes is your assurance of lasting satisfaction.



The Farmers' Elevator Co. at Stewartville, Minn., wanted a complete elevator, feed mill together with a complete set of warehouses and outbuildings for receiving and processing of grain and feeds. The above is the result of IBBERSON efficiency. Installed therein by us, is a complete line of machinery that can be operated at highest efficiency and profit.

Consultation Without Obligation

Find out what IBBERSON can do for you before building or remodeling. Write today. Our book of Ibberson Built Plants will interest you.

T. E. IBBERSON COMPANY

Engineers and Contractors

Minneapolis, Minn.

WISCONSIN

Blanchardville, Wis.—Oscar Disrud has purchased a half interest in the Erickson Feed Co.

Deerfield, Wis.—The Deerfield Farmers Co-operative recently installed a new feed mixer and grinder.

Dodgeville, Wis.—R. W. Hennesey & Son recently completed the construction of a new flour warehouse.

Rudolph, Wis.—The Rudolph Mercantile Co. recently added a locker plant to its feed mill. Frank Miller is manager of the business.

Oconto Falls, Wis.—T. C. Tait, part owner of the Falls Flour & Feed Store, has announced his candidacy for mayor at the April 2 election. —H. C. B.

Bangor, Wis.—Shirley Schuster of the Schuster Flour & Feed recently moved his offices to the downtown section to provide additional room for his feed mill.

Clintonville, Wis.—The La Plant Hatcheries, Inc., has reopened its store under the new management of Harold Kuske. The firm handles chicks, feed and equipment. —H. C. B.

Valders, Wis.—Extensive repairs were made at the Farmers Elevator Co.'s elevator recently. New head drives, feeders on the mill, new leg equipment were put in by the T. E. Ibberson Co.

Bangor, Wis.—The Bangor Milling Co. sustained a small fire loss at its plant on Mar. 13 when a hole was burned in the floor under the bagging spout, indicating a piece of hot metal out of the mill as cause of the blaze.

Adell, Wis.—Adell Co-operative Union held its annual stockholders meeting Mar. 26 when dinner was served and entertainment provided. The firm recently completed construction of a modern feed plant. B. L. Hilger is manager.

Stoughton, Wis.—A plant to can carp for animal feed with an annual capacity of 3,000,000 lbs. of carp, housed in a two-story building 100 ft. square, is proposed by the Wisconsin Conservation Commission if land and some material facilities are supplied by this city. Local voters will decide the question at a referendum on April 2.

Manitowoc, Wis.—The Oriental Milling Co. has completed improvements at its plant which included installation of a full line of mill equipment by the T. E. Ibberson Co. A large number of processing bins have been provided; grain cleaners; a Strong-Scott 1½-ton mixer and a 1-ton mixer; an attrition mill; corn cracker and grader; feed dresser; and special valve and soft stock fittings were installed.

Amery, Wis.—The Northwest District Dealers club of the Central Retail Feed Ass'n met Mar. 4 at the Princess Cafe when more than 40 feed men were present. J. E. Sams, sales manager of Blatchford Calf Meal Co. gave a practical talk on retail merchandising and I. O. Hembre, Barron Co. Agri. agent, showed color films of experimental plots grown in the county last year. Another meeting will be held in May.

Columbus, Wis.—The M. & S. Feed Co., operated and managed by Herbert Madaus and Hugo Sydow since July, 1933, before which time the business was known as the Dering Feed Co., has added new equipment and increased its space, thus speeding up operation. A new ton grain mixer was added and the loading platform was lengthened by 20 ft. and its width increased 4 ft. New hoppers were installed and all inside hauling is done by conveyors.

Kewaunee, Wis.—The Kewaunee Grain Co. thru its representative, Mayor C. L. Duvall, its sec'y-treas., pleaded guilty to operating a truck without a permit when arraigned recently before Judge G. H. Crowns, and drew a small fine. There are those who can whittle a chuckle out of that bit of information by the way, and, as for that, viewed from the angle of "a law for thee, not me" or the city official watching his own door-step, there's a smile here for everybody.

Pigeon Falls, Wis.—The new modern feed mill building for the P. E. Ekern Co. will be built by the T. E. Ibberson Co., replacing the plant that was destroyed by fire Jan. 4. The mill, to be 30x40 ft. and 44 ft. high, will be fitted with the necessary legs and a number of processing bins and will be equipped with a hammermill and mixer, grain cleaner and corn cracker and grader. The entire structure will be covered with galvanized iron. The company has its own water power which will supply power to the various machines.

Milwaukee, Wis.—E. H. Hiemke was nominated for the presidency of the Milwaukee Grain & Stock Exchange at the annual caucus held Mar. 16. Mr. Hiemke has been vice-pres. of the Exchange for the last two years. His selection for the position is regarded as a formality, since he is unopposed. The election will be held in April. Mr. Hiemke has been in the grain business since 1901 and has been a member of the Exchange since 1905. He is vice-pres. of L. Bartlett & Son Grain Co., and also represents Lowell Hoyt & Co. on the Exchange. All other nominees for executive positions were made without opposition also. W. C. Holstein, present 2nd vice-pres., was selected to succeed Mr. Hiemke as first vice-pres.; C. A. Houlton was nominated as 2nd vice-pres.; Harry A. Plumb was re-nominated as sec'y-treas. Nominated for places as directors, three to be chosen, are C. Q. Dunlap; Lewis E. McClellan; A. M. Kayser; Roy I. Campbell; H. H. Hicks and J. Howard Mallon. Five were nominated for the board of arbitration, three to be selected; they are C. D. Moll; William Eiteneier; Paul E. Riess; W. G. Zinn; John G. Davis. J. V. Lauer and Thos. M. Corcoran were nominated to fill two vacancies on the board of appeals.

WYOMING

Riverton, Wyo.—The Wimpenny Elevator, pioneer elevator of Riverton, has been sold to Paul B. Hughes of Leavenworth who has taken over the business. He was engaged in the grain business at Leavenworth for the last five years, and prior to going there, operated an elevator at Greybull. Clarence Wimpenny, former owner, is retiring from the business because of ill health. He had operated the elevator for the last 25 years, purchasing the interests of his father in the business several years ago. New equipment was added and storage facilities increased. Mr. Wimpenny will continue to reside here.

Wm. C. Durant, his wife, Catherine L. Durant, Joseph Buchhalter, Clement B. Johnson, and the brokerage firm of H. W. Armstrong & Co., all of New York City, having been found guilty of violating provisions of the commodity exchange act, were on Mar. 19 debarred by the C.E.A. from trading on commodity exchanges. Defendants will appeal to the Circuit Court.

Dust Explosion Prevention

By DAVID J. PRICE, chairman N.E.P.A. Com'te on Dust Explosion Hazards.

In the 20-year period 1919-1938, inclusive, the Chemical Engineering Research Division in the Bureau of Agricultural Chemistry and Engineering of the U. S. Department of Agriculture, has investigated or studied 398 dust explosions to determine the causes and to obtain information which would assist in developing methods of preventing such explosions in industrial plants.

In the 398 cases reported to the Bureau, for which accurate records are available, 318 lives were lost, 712 persons were injured and the property loss amounted to \$28,302,685. These losses occurred in a wide variety of industries, including flour and feed mills, grain elevators, starch factories, sugar refineries, woodworking plants, powdered milk plants, soap powder factories, sulphur crushing and pulverizing plants, cork grinding mills, chocolate and cocoa plants, paper mills, aluminum, zinc and magnesium plants, rosin handling plants, fertilizer factories, and many others.

The following table shows the extent of the reduction both in the number of explosions and losses incurred:

	No. of explo- sions	No. killed	No. injured	Property Loss
1919-1928, inclusive	217	193	362	\$18,249,900
1929-1938, "	181	125	350	10,052,785
Reduction	36	68	12	\$ 8,197,115

In 1922 a special com'te was organized by the National Fire Protection Ass'n to obtain information on dust explosion prevention, and to make it available to the industries affected.

Supply Trade

Dallas, Tex.—A. M. Sorenson is established as a J. B. Sedberry, Inc. representative, with warehouse fully stocked with Jay Bee parts at 705 Ross ave., from which point prompt service on Jay Bee mills and parts may be secured.

An experienced publisher can glance thru the advertisements of a strange newspaper and tell you a great deal about the city in which the paper is published. His estimate of the degree of prosperity will be close, and he can tell whether the people are progressive or reactionary.

Milwaukee, Wis.—The Falk Corporation, announces several changes in executive positions. Edward P. Connell, treas., assumes the newly created position of General Manager. Walter L. Schneider succeeds Matthew A. Carpenter as Sales Manager in charge of active sales of all Falk Products except those covered by the Foundry division. Mr. Carpenter, who is sec'y of the corporation, will continue in a supervisory capacity over the Sales, Sales Promotion, and Advertising Departments.

Fire Fighting equipment companies were ordered by the Federal Trade Commission Mar. 23 to desist from price fixing and exclusive dealing contracts. They are: Walter Kidde & Co., Inc., New York; American La France and Foamite Industries, Inc., Elmira, N. Y.; C-O-Two Fire Equipment Co., New ark, N. J.; National Foam System, Inc., Philadelphia; Fyrout Co., Inc., New York, a subsidiary of Walter Kidde & Co., Inc. They manufacture or assemble and sell fire fighting equipment including carbon dioxide fire extinguishing systems and carbon dioxide portable fire extinguishers.

The Federal Trade Commission has issued an order requiring W. H. Maze Co., Peru, Ill., to cease and desist from certain misrepresentations in the sale of roofing nails. The Commission found that, although the respondent advertised its "Maze Lead Head Anchor Shank Nails" as having twice the holding power under normal conditions of all other nails ordinarily used for roofing, and four times the holding power of certain other roofing nails, such representations were untrue. The respondent company was directed to discontinue these claims and to cease representing that its roofing nails have any designated holding power in excess of that possessed by other roofing nails, when such is not a fact.

Chicago, Ill.—Convinced that the "consumer movement" and public skepticism of advertising constitute the major problem facing advertising and business during 1940, *Advertising Age* will attempt to develop practical, workable ideas for bringing advertisers and consumers together by offering \$1,000 in cash prizes for the best programs for improving relationships between advertisers and consumers. The competition is open to everyone, in or out of the advertising field. For the best plan submitted, in the opinion of an impartial jury to be announced later, *Advertising Age* will pay \$500 in cash; for the plan judged second best, the award will be \$250; for the plan considered third best, \$150 will be given, and the fourth best plan will be awarded a \$100 prize. There are no rules of any kind to follow, with the single exception that all entries must be mailed or delivered to the Contest Secretary, *Advertising Age*, 100 E. Ohio street, Chicago, no later than midnight, May 31.

Portland, Ore.—Pacific Northwest wheat is being sold for shipment in Russian ships to Vladivostok.

Effects of Storage on Soybeans

Poor stands of soybeans, apparently resulting from the use of old seed or seed improperly stored, have been fairly frequent in Illinois.

Half-bushel bags of seed of five varieties (Manchu, Lexington, Morse, Ilsoy, and Ebony) grown in 1926 were stored indoors in metal cans, and each spring beginning in 1927, seed from each variety was planted in the field in rod rows replicated four times. Seed described in the following discussion and tables as "new" was that used the first crop season following its production. One-year-old seed was that used in the second crop season following production, and so on.

The average yield of all varieties from the one-, the two-, and the three-year-old seed was only slightly less than the yield from new seed; but when seed stored four years or longer was used, yields were sharply reduced. The stand of plants, which is of course dependent upon field germination, declined rapidly when seed older than two years was used. If weeds had not been well controlled by row cultivation, yields might have declined more rapidly as the number of plants was reduced.

The black and the brown varieties, Ebony and Ilsoy, retained their vitality and yielding ability longer than the three lighter colored varieties—Manchu, Lexington, and Morse—but in all varieties stands declined consistently with increasing age of seed.

SHRINKAGE IN STORAGE—Tests on the shrinkage of soybeans stored under farm conditions were started at the Illinois Station in October, 1929. Approximately 215 bus. of Illini soybeans, weighing 12,905 pounds, were stored in a portable crib. The beans had a

moisture content of 11.1 per cent. Crib and contents were weighed at weekly intervals. An empty check crib was weighed each time, so that any change in weight of crib could be eliminated in weighing the beans.

The greatest loss in weight (73 pounds, about one-half of 1 per cent) was during December, 1929, shortly after storage began, and the greatest gain in weight (101 pounds) was during April, 1930. The weight of the soybeans varied directly with the relative humidity of the air and inversely with temperature. During seasons when humidity was highest and temperatures lowest, the soybeans gained in weight; during the hot, dry summer months they lost weight.

Altho no weights were taken of the beans at different levels in the crib, it was apparent that gains and losses in weight were not uniform thruout the depth of the crib, for there was marked variation in the maximum and minimum moisture contents of the beans from the various levels and this would affect their weight. Those on the surface had a maximum of 18.0 per cent moisture and a minimum of 7.7 per cent, a variation of 10.3 points. Those on the bottom of the crib, 4 feet below the surface, had a maximum of 12.4 per cent and a minimum of 10.5 per cent, a variation of only 1.9 points. Variations in moisture content of beans from other levels in the crib were intermediate between the variation at the top and that at the bottom.

GERMINATION TESTS OF STORED BEANS—At frequent intervals samples were taken with a grain trier from the surface of the beans in the crib and from approximately 1, 2, 3, and 4 feet below the surface. Samples were collected twenty-six times at more or less

regular intervals beginning one month after the date of storage and continuing until the beans were removed on Feb. 7, 1935.

The germinating quality of the soybeans from the upper levels of the crib deteriorated rapidly in storage, according to laboratory germination tests. On May 3, 1930, when the beans from this crib would normally have been planted by farmers as high-quality new seed, the surface samples germinated only 92 per cent, those from a foot beneath the surface germinated 97 per cent, and those from the lower depths germinated 100 per cent. Four months later, on Sept. 8, the beans from the surface and those from a foot below the surface germinated only 73 and 78 per cent respectively, whereas those collected from 2, 3, and 4 feet below the surface germinated 97, 100, and 100 per cent.

In the spring of 1930 the average germination during the four-month period April thru July varied from 90 per cent on the surface to 99 per cent 3 and 4 feet below the surface. In April, 1931, at which time the seed was a year old, germination was further reduced to 59 and 73 per cent respectively at the surface and a foot below the surface, while seed from the deeper levels germinated 93 per cent or better.

This deterioration of the seed at the upper levels of the crib was caused by the greater absorption of moisture at these levels than at the bottom. The crib used in this study was probably as nearly moisture-proof in construction as the average farm storage crib. Slight amounts of snow sifted under the eaves of the crib, however, during the tests, and contributed somewhat to the poor germination of the surface beans.

The germinating quality of soybeans stored in farm cribs thus depends not only upon the age of the seeds, but also upon the condition of the crib, the moisture content of the beans at the time of storage, and the depth of the beans within the crib. Beans having a fairly high moisture content at harvest cannot, without injury to their viability, be stored as deep in the crib as the beans in this study were stored.—Bull. 462, University of Illinois.

Strong-Scott's New Truck Dump

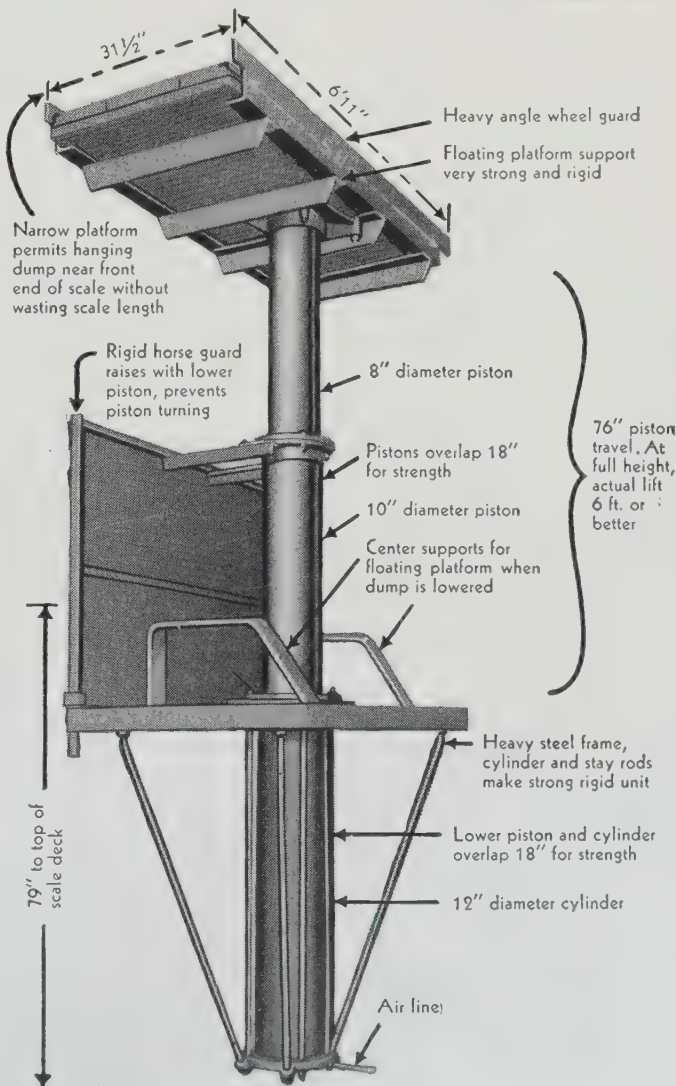
Newly developed and tested, and now on the market is the Strong-Scott Telescoping Truck Dump, which has several new advantages to offer.

The new dump has a cylinder 3 ft. shorter than the company's standard dump, which is especially desirable where bad water conditions makes difficult excavation as deep as is necessary for longer cylinders.

Like all Strong-Scott Dumps, this telescoping type can be suspended from the scale timbers, a patented feature.

The 76 inch piston travel of the new dump gives a lift of more than 6 ft. Its operation is clearly explained in the accompanying illustration.

The Associated Producers and Distributors advocate legislative measures to (a) define the class of peddlers by motor vehicle without burdening local established producers, merchants and manufacturers; (b) regulate such peddlers to eradicate present evils, and (c) equalize in some measure the burdens of taxation.



Toledo Board Publicizes Market Advantages

"Over 52,000,000 bus. of grain were bought and sold in Toledo last year," according to a pamphlet being sent out to members of the grain trade, to schools and universities, by the Toledo Board of Trade.

The pamphlet points out that the Toledo Board of Trade is a non-profit corporation that neither buys nor sells grain or any other commodity, but that it maintains a public market place, trading rooms, market information, rules governing trading, and exercises disciplinary powers over its members; in short, that it makes possible the purchase and sale of grain on the lowest margins for which any farm crop is handled.

Market advantages are naturally stressed in the pamphlet, which continues, "Because of the early clearance of ice at this point on the lakes, the Toledo port opens for navigation from three to six weeks earlier in the spring than any other port thus enabling the movement of vessels much sooner. Toledo, the leading soft winter wheat market of the country, is located where the producing and consuming areas meet. It is to be expected that, favored by natural advantages, Toledo should enjoy a continued growth as one of the nation's leading grain centers."

Pointed out is the fact that Toledo mills produce 7,500 bbls. of flour and 4,000 tons of mill feed daily, that member firms control more than 9,000,000 bus. of storage space and contemplate erection of additional storage. Named are the present officers of the Toledo Board of Trade, George R. Forrester, president; Milton H. Faulring, first vice-president; H. W. Applegate, second vice-president; W. A. Boardman, treasurer; and Alfred E. Schultz, sec'y.

Field Seeds

Charlotte, N. C.—Lonok Seed Co., Inc., got its charter Mar. 4.

Jackson, Minn.—The Seger Seed Co. has installed a new seed cleaner.

Aberdeen, N. C.—McCrimmon Feed & Seed Co. got its charter Mar. 6.

West Allis, Wis.—O. R. Staples has purchased the Mayr Seed & Feed Store.

Denison, Ia.—Richard Murray is manager of a new Earl May seed store opened here.

New York Mills, Minn.—Ed Hintsala has purchased the Steinkraus mill building, and remodeled it into a seed and feed store.

Denison, Ia.—A seed store has been opened here by the Earl May Seed Co., of Shenandoah, in charge of Richard Murray.

Decatur, Ill.—Lawrence Thrift, 41, owner of C. A. Thrift & Sons' seed and implement company, passed away Feb. 24, following a long illness.

Jackson, Mich.—The Isbell Seed Co. has appointed Frank S. Love, prominent southern seedsman, and seed ass'n official, its representative in the south.

Rosalie, Neb.—Albert Dohrt recently purchased the old Town Hall, which he is remodeling into a seed and feed store to operate as Albert Dohrt & Sons.

Grants Pass, Ore.—Doubling the size of its Ladino clover cleaning plant has been voted by members and directors of the Josephine Growers Cooperative Ass'n.

Roseau, Minn.—New seed and grain cleaning machinery has been installed in the plant of the Northern Seed & Grain Co., which is managed by Seth Gavelin.

Detroit, Mich.—Charles F. Lohrman, of Lohrman Seed Co., passed away Feb. 23 at his home in Florida, following two weeks' illness. He was 79 years old.

Menomonee Falls, Wis.—William Slugg, Jr., was elected president of the Milwaukee District Seed & Feed Dealers at a recent meeting, succeeding John Gessert. Both are of this city.

Albany, Ore.—Charles H. Lilly Co., of Seattle, Wash., has leased the warehouse of the Hunt Packing Co., will install seed cleaning equipment, and use it for seed cleaning and warehousing.

MacGregor, Mich.—First full carlot of the new Michelite white navy beans was shipped by a local elevator recently. Foster father of the new variety is E. E. Down of Michigan State College.

Mansfield, La.—The Bufkin Grocery Co. has opened a retail seed and feed store next to its grocery store. The new store will operate as Bufkin Feed & Seed Co. W. H. Webster is manager.

Washington, D. C.—The U.S.D.A. has approved forms for country shipper's declaration of origin, kind, variety and type of seed; and growers' similar declaration, to be used under the new Federal Seed Act.

Seedsmen in many localities are finding it difficult this season to find soybeans of good germination, or oats of pure type. Offers of soybeans from Iowa for seed are being refused as their test is only 60 to 70 per cent.

Sioux City, Ia.—John P. Mulhall pleaded innocent to a charge by an Iowa state agricultural department agent of his having sold timothy seed Feb. 9 and 21 that was not labeled to show purity, germination and weed seed.

Greeley, Colo.—A. C. Turner is the new manager of the Rogers Bros. Seed Co. branch plant here, filling the place left vacant by Edwin R. Holden, who has been transferred to the firm's Idaho Falls, Ida., headquarters.

New York, N. Y.—Hinton & Co., Inc., seedsmen, have leased new and larger quarters for their office and warehouse, with floor space totaling 20,000 ft. Alterations will provide for considerable new machinery and equipment.

Portland, Ore.—David M. (Duke) Hamilton, one of the founders of Northrup, King & Co., pioneer in the seed industry, and resident of the far west for the last 30 years, passed away in a hospital here, Mar. 13. He was 83 years old.

San Francisco, Cal.—Separate meetings were held here Mar. 12 by the California Seed Council and by California seedsmen to discuss the proposed new California Seed Act which is being prepared to conform to the requirements of the Federal Seed Act.

Chicago, Ill.—The Seventh (Chicago) and Eighth (St. Louis) Circuit Courts have dismissed the petitions for review of the order prohibiting misrepresentations of agricultural seed by the American Field Seed Co., Chicago, and Berry Seed Co., Clarinda, Ia.

Omaha, Neb.—Climatic and soil conditions being favorable ten varieties of barley will be tested in Northeastern Nebraska by Glenn H. LeDoyt, sec'y of the Nebraska Grain Improvement Ass'n to determine the possibility of making an annual crop of malting barley.

Portland, Ore.—The large export movement of dried peas to Finland and other Scandinavian countries has so depleted pea stocks in this area that all offerings and quotations on Oregon, Idaho and Washington peas are made subject to further confirmation.—F. K. H.

Paradise, Pa.—Wm. A. Frew has been prohibited by the Federal Trade Commission from using lottery methods in sale of merchandise, trading as Paradise Seed Co., Lancaster County Seed Co., Lancaster Seed Co., Garden Spot Seed Co., Garden Seed Co. of America and Good Luck Gardens.

Decatur, Ill.—Funk Bros. Seed Co., of Bloomington, held "official opening" of its new store here on Feb. 24. Souvenirs were distributed to all callers. Said company officials: "This large, new store will give Macon County farmers faster and more efficient delivery of our 'G' hybrid corn, our 40 kinds of farm seeds, inoculation and garden seed collections."

Grants Pass, Ore.—Buckhorn, a weed seed that seedsmen go to considerable expense to clean out, has been found of value. The Growers Co-Operative Ass'n, which has cleaned nearly two tons of buckhorn out of the Josephine County ladino clover crop, expects to sell the weed seeds for about \$200 to sheepmen in Douglas County who value it for early spring pasture.—F. K. H.

Indianapolis, Ind.—"Introduction of heavy northern grown oats for seed purposes has brought disappointment in Indiana," claims Sec'y Fred Sale, of the Indiana Grain Dealers Ass'n. "Do not mislead customers when selling them 40 lb. test weight northern oats by indicating that they will produce that good when grown in Indiana. Many of these seeds are not adaptable to Indiana's climate."

Winnipeg, Man.—The Canadian Seed Growers Ass'n will hold its annual meeting at the University of Manitoba, June 17 to 19, inclusive.

Columbus, O.—C. N. McIntyre, State Agricultural Department seed specialist, said a survey of 216 germination tests on yellow beans showed an average germination of only 71.4 per cent, as compared with 90 per cent or more in an average year. "Unless sources of high germinating seed are discovered farmers will have to increase the quantity of beans sown per acre if they hope to realize a good stand."

Springfield, Ill.—L. A. Moore, superintendent of the Illinois Division of Plant Industry, has mailed three releases to Illinois seedsmen in connection with the new federal seed law. The first abstracts important provisions of the act; the second sets forth "Requirements for Labeling Agricultural Seeds and Suggested Forms of Labels;" the third is "Regulations Pertaining to Interstate Commerce Promulgated Under the Federal Seed Act."

Lafayette, Ind.—A special three weeks' course in official methods of seed testing will be offered again at Purdue University during the coming summer session, July 1-20. The course is a special three weeks' intensive course of special interest to seedsmen. The course will feature both germination and purity testing in the state seed testing laboratory, supplemented with lectures, laboratory, and field trips, which will permit first study of noxious and troublesome weeds.

Little Rock, Ark.—W. W. Cook of Bono, Craighead County, pleaded guilty to a charge of selling untested lespedeza seed, in violation of the State Pure Seed Law, and was fined \$15 and costs on March 13. Paul Gowan, Mountain View, pleaded guilty to a similar charge on Feb. 28, at Mountain View, and was fined \$10 and costs. T. A. Neal of Lunenburg, Izard County, pleaded guilty to a similar charge on the same day and was fined \$10 and costs, and J. W. Hunt of Jumbo, Izard county, was fined the same amount on a similar charge about March 1.

All government seed taken under the loan program of 3 cents on peas and 7½ cents on hairy vetch, will be given to farmers in the southeast and in sections where it has not been used heretofore. None of the seed taken over will be sold, but given to co-operating farmers. It is the intention of the A.A.A. to absorb the land grant rates as a profit to the A.A.A., thus not interfering with the regular commercial trade. All seeds must be moved in cotton packages, specifications for which have been given to all leading bag manufacturers.

Offers Free Seed Test

Syler & Syler, at Nappanee, Ind., working with County Agent Howard Brown, of Goshen, is offering to farmers free analysis of the farm seeds.

This free service from the firm's seed laboratory is finding quick response from farmers. Its intent is to improve the quality of the clover, alfalfa, and other crops grown thru discovering impure lots of seed before they are planted.

Indiana's seed law requires that all lots of seed offered for sale must be tagged to show the purity, and to name any noxious weed seeds present, showing the percentage of each in the sample. Joker in this law is that it exempts any farmer who sells seed only on his farm, and does not advertise beyond erecting a sign on his own property to publicize his offerings.

But even the farmers who cannot resist the lure of price, and who buy such untaged seed from other farmers, are anxious to know what they brought. The free purity tests in the Syler & Syler laboratory will tell them, and enable them to avoid polluting their fields with noxious weeds.

Redtop Handlers Get "Seasonal Exemption"

Redtop seed handlers have been granted "seasonal exemption" from the hour provisions of the Wage-Hour Law for cleaning and processing redtop seed, on application of the Shultz Seed Co., Olney, Ill.

Investigation by the wage-hour administration demonstrated that the industry is of seasonal character. The exemption permits redtop handlers to carry on cleaning and processing operations for 12 hours in any work day, or 56 hours in any work week, for a period, or periods, aggregating 14 work weeks in any calendar year, before meeting the time and a half for over time requirements of the law.

Seed Labeling in Iowa

Unless a farmer sells his own seed on his own premises without advertising or display, he is not exempt from the Iowa seed law, under the official departmental interpretation, and even in such cases must be able to declare it free from primary noxious weeds in the extent not to exceed one seed in 5 grams or 6 in 30 grams.

If you know of a case, for instance, in which seed is being displayed and offered for sale at a sales barn, without proper label as to purity, germination, and content of noxious weeds, act promptly by giving the information to the district dairy and feed inspector, to O. N. LaFollette, or to E. L. Redfern, State Chemist.—Ron Kennedy, sec'y Western Grain & Feed Ass'n.

Cotton Bags Specified for A.A.A. Seed Loans

Austrian winter peas and hairy vetch must be sacked in cotton bags to be acceptable as collateral for Commodity Credit Corp. loans in the 1940 seed loan program for Pacific Northwest states, announces the U.S.D.A., Washington, D. C.

Specifications for the cotton bags were set up by the Cotton Processing Division of the Southern Regional Research Laboratory. The bags were developed especially for this purpose.

Estimates anticipate need for 750,000 to 1,000,000 bags to sack the 1940 Austrian winter pea and hairy vetch crops. Heretofore burlap bags have been used.

Treating Seed Grain

BY TRAVELER

Growing interest is being expressed by Iowa grain elevator operators in seed grain cleaning and treating devices. Realization has come upon them that cleaned and treated seed grains means bigger and better grain crops for them to handle.

Quite apart from the bigger and better grain crops to be purchased and passed thru the elevator, is the direct gain that comes from satisfying a demand existing among the farmers. With the A.A.A. cutting down the acreage that a farmer may devote to this or that designated crop, each farmer is interested in growing more on the acres left for him to plant, and in self defense he wants to plant clean and treated grain to assure himself of the most that his allotted acreage and the elements will permit him to produce.

Thus grows the market for a service by the elevator, a service that currently commands 5c per bushel, including the copper carbonate, or mercury dusts used in treating the grain. If half the farmers in a community avail themselves of the service, most elevators can make a profit from providing the equipment and making the service available.

It turns into a three-way gain. First is the income from the seed grain cleaning and treating service. Second is the good will attracted to the elevator that thus helps its customers

get the most from their land. Third is the increased volume of grain that becomes available at harvest time for the elevator to purchase.

Early Maturity and High Yields Feature Minhybrid

"It's the soft corn year that tests the mettle of hybrid corn varieties," according to R. F. Crim, extension agronomist, University Farm, Minn., who points out that there are adapted early-maturing hybrids on the market that yield higher than many of the late-maturing types offered for sale.

In favorable corn years almost any variety produces good crops, but one of these seasons rough weather will come with an early frost and a short growing season and, if this happens, the farmer who has that extra "margin of safety" and is raising adapted varieties will have a crop while the man who grows late-maturing types will harvest nothing but fodder.

Hard Seeds in Lespedeza

Both Federal and Arkansas laws now require the analysis tag to show hard seeds separately from the percentage of actual germination, thus for example—"Germination 55%, hard seeds 30%". The "germination plus hard seeds," which in this case would be 85%, may be shown in the tag in addition, if desired. This means that in the test 55% of the seeds actually sprouted, while 30% of the seeds neither sprouted or decayed, but remained hard and sound.

The presumption is that most of the hard seeds will sprout later in the season, after the coat becomes softened. Hard seeds in lespedeza are not necessarily considered undesirable and a total germination plus hard seeds of 85 to 90% might be considered about average.—Paul H. Millar, chief inspector, Arkansas State Plant Board.

Combine Harvesting of Timothy Seed Detrimental

By JAS. E. BARNES, botanist, Illinois Division of Seed Inspection

During the rush of the timothy season this year, we received 1,083 samples of timothy of which 693 or 64 per cent germinated above 91; 263 or 24 per cent germinated 81-90; 85 or eight per cent germinated 71-80; and four per cent germinated 60 or less.

That there has been apprehension over timothy germination this year is evident by the amount of correspondence I've had on the subject. To throw some light on the matter, I put an inquiry in the Seed Analysts News Letter, suggesting that possibly the practice of using the combine to harvest timothy might be at the bottom of the problem.

I quote here a reply from a reputable wholesaler:

"This is a matter of great importance and while definite conclusions probably should not be drawn from one year's experience, we feel very definitely that the combining of timothy seed does have a detrimental effect upon its germinating quality.

"In our many years of handling timothy seed, we do not recall ever having run into a situation such as we found this year. Ordinarily the trade could look forward to an average germination of new crop seed of around 93 to 95 per cent. This year much of the seed which was offered as new crop seed showed very low germinating quality. We realize that in some cases there was a large possibility that old seed had been mixed with

the new, but we have had enough instances of low germinating seed which could be traced back through reliable channels directly to producers, who admitted that their seed was combined, to know definitely that the low germination of seed offered out this year could not be entirely attributed to old seed.

"Under the old method of harvesting, the seed was bound and left to stand for some time in the shock or in stacks where it went on to final maturity and went thru its sweating process. In combining, the seed is cut, threshed, and bagged at about the same stage of maturity in which it was formerly harvested. It thus has no plant to draw upon to bring it to its final stage of maturity and it goes through its sweating process in the bag.

"Not only does combining tend to lower or kill the germination but it results in a much poorer quality of seed because it has to be beaten much harder in order to get the seed out of the head than under the old method of threshing from the shock or stack. The resulting seed is thinner, more badly hulled, and contains a much larger percentage of dirt and trash."

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Viability of Weed Seeds Studied

Sixty year old weed seeds will undergo germination tests to determine how long life will remain in a seed when agronomists at Michigan State College dig up one of 11 seed and sand filled bottles remaining from an original 20 that were buried on the campus grounds in 1879 by the late Dr. W. J. Beal.

The bottles were filled with seeds of common weeds found near East Lansing. A decade ago the last test was made, 50 years after burial of the bottles. Five of the 20 varieties of weed seeds still sprouted and put forth seedlings in the test flats.

The 5 that retained life a decade ago were common curly dock, evening primrose, common mullen, black mustard and a water pepper that belongs to the smartweed family. Fireweed, spurge, and white clover have shown no viability in the previous 50 years of testing.

Important Facts About Spring Wheat Varieties

The Northwest Crop Improvement Ass'n has conducted wheat variety tests for the past eight years for the purpose of securing commercial milling and baking information on many new varieties. These trials have been made in comparison with well recognized, standard varieties. The results of the 1939 trials were discussed by representatives of the Northwest Spring Wheat Mills on March 8, 1940. Following the meeting their recommendations were as follows:

THATCHER is the preferred stem rust resistant variety of spring wheat. Northwest mills have found that it will produce a flour readily acceptable to the baker and housewife. Ceres, Marquis and Reward likewise have acceptable flour qualities but lack resistance to stem rust.

Certain hard red spring wheat varieties have characteristics that make them very desirable to the consumer. Other varieties have characteristics that render them less desirable and often unacceptable for the high grade spring wheat flours. Varieties of proven inferior quality often appear under new names thus disguising their identity. Any variety that cannot be recommended by your experiment station and the Northwest Crop Improvement Ass'n, because of low yield, lack of disease resistance or undesirable milling qualities, should be avoided.

Superiority of Hybrid Seed

The five best hybrids on all the ten fields in the 1939 Illinois corn-performance tests by the State Experiment Station yielded an average of 16.5 bushels of sound corn an acre above the five open-pollinated varieties. They also exceeded the open-pollinated varieties in lodging resistance, having 12.7 more erect plants per hundred.

On every test field the five best hybrids exceeded the five open-pollinated varieties in yield of sound corn and in percentage of erect plants. On the southern Illinois field, where in 1938 the five best hybrids fell below the five open-pollinated varieties in sound corn yield, the superiority of the five best hybrids was 12.2 bushels an acre.

In the northeastern, northern, west north-central, southern, and southwestern sections of the state even the five poorest hybrids averaged above the open-pollinated varieties in yield of sound corn.

The soil-adaptation tests showed that hybrid corn grown on soil of high fertility will produce very high yields. In fact, the yields of hybrids are much more markedly increased by good soil-treatment practices than are the yields of open-pollinated varieties. Hybrids, however, do not perform even relatively as well on poor soils as they do on good soils.

Certain physical characteristics—such as the tendency of the plant to lodge, susceptibility to disease, abnormal ear and kernel development—are sometimes as important in determining the adaptability of a hybrid to a given soil as are the yields of grain produced.

Bacterial Stripe Infecting Oats

Bacterial stripe blight is accused of causing heavy losses in the oats crop of Illinois last summer, according to Dr. Benjamin Koehler, chief in crop pathology at the University of Illinois, Urbana. Moist weather in the first half of the season, he claims, was favorable to the spread and development of the disease. Poor grain yields, low bushel test weights, and poor germination, are the results.

If weather and environment are favorable to bacterial stripe blight in May and June, as they were last year, claims Dr. Koehler, the infection will be carried by the wind and there is no known way to stop the spread of the disease.

Treatment of seed oats with dry-dust disinfectant to kill seedling diseases will help materially because such treatment gets the seed off to an early and healthy start, and there is always a good chance that spread of the disease by wind will not reoccur.

Enforcement of Federal Seed Act

Evidence of traffic in low grade seeds, most of them virtual screenings, across the Arkansas-Missouri and Arkansas-Tennessee lines in violation of the Federal Seed Act which went into effect Febr. 5, 1940, is being accumulated by the Arkansas Plant Board and will be turned over to the U. S. Department of Agriculture when investigations are completed.

The violations involve Missouri and Tennessee merchants, and Missouri and Arkansas truckers who buy untested or misbranded seed from them, bring the seed across the state line and sell it to Arkansas farmers.

Under the Federal Seed Act it is unlawful to transport or deliver for transportation in interstate commerce either untested seed, misbranded seed or seed containing noxious weeds in amounts forbidden by the laws of the state into which the seed are transported.

Under the Act, the person who transports such seed across the state line is subject to a fine of not to exceed \$1,000, and the merchant

in selling to him, makes himself *particeps criminis*. In addition the seed is subject to seizure by the U. S. Marshal.

Much of the seed involved in the cases so far uncovered contained dodder and other noxious weed seeds in enormous quantities, and was sold to Arkansas farmers at prices not far below the cost of good seed.

Growers of Open Pollinated Corn Profit by Buying Seed

Corn breeding requires a special interest in the crop and an attention to the details of selection that farmers generally do not have the time to apply. The farmer who is not willing to make the effort necessary to maintain the productivity of his own variety will do better to obtain his seed year after year from a reliable producer of an adapted strain of proved performance, if such a producer is known. Unless seed from a reliable producer is available, however, the best place for the farmer to obtain seed corn is from the fields on his farm that were planted with a strain which has generally proved successful in the locality. Or he may be able to get such seed from a neighbor.

A conscientious seed-corn breeder may render real service to his community, for which he should be adequately compensated. A bushel of seed will plant from 4 to 8 acres, depending on the variety and locality. Only a small increase in productivity is needed, therefore, to pay good dividends on an investment in superior seed corn.—Farmers Bull. 1822, U.S.D.A.

Las Animas, Colo.—H. N. Carman, Bent County seedsman since the Gay '90s, for years an exporter of choice alfalfa seed from the Arkansas Valley, and inventor of an alfalfa seed cleaner, has retired from active business.

Ames, Ia.—The swing in alfalfa seeding will be in the direction of Ladak this spring, says Dr. C. P. Wilsie, of the Agronomy Department at Iowa State College. Grimm—long a favorite of Iowa and the North Central region—is being pushed into the background by higher yielding and more wilt resistant varieties. "For 14 years, field experiments comparing varieties and sources of alfalfa seed have shown the yielding superiority of Ladak and Cossack under Iowa conditions," Wilsie states. "Grimm has produced yields from 10 to 15 percent lower than Ladak and Cossack over this period."

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Grain Carriers

Peoria, Ill.—The Mid-West Shippers Advisory Board will hold its next meeting Apr. 3 and 4 at the Pere Marquette Hotel.

Buffalo, N. Y.—Ice is 19 inches thick in the Buffalo harbor, compared with 6 inches at this time last year, and thicker than in many years, with the exception of 1936. Last year navigation opened Apr. 16.

Toronto, Ont.—Initial lake rate on wheat from head of the lakes to Montreal is 7c per bushel, the maximum allowable under war regulations. A rush of wheat for export is anticipated when navigation opens.

Washington, D. C.—Grain and grain products were loaded into 30,548 cars during the week ended Mar. 9, compared with 31,211 cars during the corresponding week a year ago, reports the Ass'n of American Railroads.

Comparing the volume of rail shipments with the volume of total distribution over the period 1928-39, Railway Age found a decline of 15 per cent in the volume of business carried by the rails, marking diversion of traffic "to other agencies of transportation."

Winnipeg, Man.—Fixed at 5c per bushel is the export rail freight rate on wheat, basis from Georgian Bay ports to Montreal and other St. Lawrence ports, which became effective Mar. 14. This reduction is subject to acceptance and confirmation. Coarse grain rates are also reduced.

Losses from theft of rail shipments reached an all-time low in 1939, when they dropped to an average of slightly more than 1c per loaded car. During the first 11 months of 1939 railroads carried an increase of 14 per cent in volume of business, enjoyed a reduction of 13 per cent in the payments for loss and damage to freight.

Portland, Ore.—Several groups of grain growers in this area have adopted a resolution petitioning the Federal Maritime Commission "to allocate the needed ships and space for the intercoastal grain and grain products movement that would take place if ships were available at the present published intercoastal rates.—F. K. H.

Hearings are being held in Washington to determine the future minimum wage (up to a possible level of 40c per hour) to be paid in the railroad industry. Railway Age, organ of the carriers, remarks: "Wage increases beyond the ability of the railways to absorb them can only result in loss of jobs . . . (which is) somewhat doubtful economics at the present time."

Buffalo, N. Y.—Eastern railroad executives have approved a reduced rate of 6c per bushel on export wheat moving from Buffalo to New York City thru the summer and fall. This rate, 1.3c below the present rate, and the lowest rate permitted under an I.C.C. ruling last fall, but 1c per bushel higher than last year, when the railroads moved 48,000,000 bus. of export grain, is expected to become effective May 1.

Toledo, O.—The complaint of the Toledo Board of Trade v. the B. & O. R. R. Company et al, has been set down for hearing at the Hotel Secor, Toledo, Apr. 9. This is the complaint of the Toledo grain interests, requesting the Interstate Commerce Commission to establish rates on exlake-export grain from Toledo to Baltimore on the same basis as now in effect from Buffalo to Baltimore; and at the same time establish rates on export-exlake grain from Toledo to other North Atlantic ports on a related basis to the Baltimore rate. The complaint was filed on Feb. 13, 1940.—A. E. Schultz, sec'y Toledo Board of Trade.

Montreal, Que.—The ice-breaker N. B. McLean entered Montreal harbor on Mar. 17, setting a new record for early break-up of St. Lawrence River ice. A report on ice conditions Mar. 20 says that sub-freezing temperatures during the past week have maintained the ice on the Great Lakes and probably tightened it. On the St. Mary's River, it is believed that without the use of icebreakers the opening will be about Apr. 10.

Washington, D. C.—Written into the House transportation bill at the close of hearings before the com'te on interstate and foreign commerce, was an amendment to wipe out limitations on Reconstruction Finance Corp. loans to railroads. The amendment would create legal preference for R.F.C. loans in railroad reorganizations, might conceivably put the R.F.C. in practical control of reorganization and pave the way for government ownership of railroads.

Toledo, O.—The Toledo Board of Trade has filed a protest against rates unfavorable to Toledo on grain from Toledo to Virginia and the Carolinas. The protest is in the form of brief of exceptions to the report of the examiner for the Interstate Commerce Commission, and will be heard by the Commission. Thousands of dollars worth of wheat and other grains are affected by the rate structure, now said to favor Memphis, St. Louis and other points of shipment. Equalization of the rates with those of the River gateways, and a structure which will permit rate charges on the basis of final point of distribution in the Virginia and Carolina markets is sought. Oral argument in the case will be heard April 22 in Washington.—Alfred E. Schultz, sec'y Toledo Board of Trade.

Transportation Regulation

By CHESTER H. GRAY, director National Highway Users Conference, over the Mutual Broadcasting System

There is a point at which either state or federal regulation becomes restrictive—even prohibitory—in character, and, most important, adds to the cost of transporting people and products. All regulation must be in the public interest and not designed to cripple and impede the shipping and passenger services of the nation, or to harass the use of the family automobile and the privately owned truck.

A common argument in recent years has been that since the railroads have been accumulating more and more of governmental red tape in the way of regulatory restraint for a half century, and have come to be, at least in the public mind, and one may say in legislative thought as well, a startling sample of over-regulation, all other methods of transportation should be equally regulated.

This is the same as saying that if I have a crippled leg and cannot function fully, the

other fellow must have his arm broken so that he will be similarly handicapped.

It is much to be preferred to ease up on railroad regulation than to strait-jacket with excessive regulations all types, or any one type, of transportation.

Rail Rates Under Fire in Colorado-Nebraska

Freight rates on wheat from western Nebraska and northeastern Colorado to Missouri river markets were under fire at a week-long hearing in Sterling, Colo., early in March.

Witnesses complained that trucks are hauling so much wheat that free and open markets are being disturbed, and growers are receiving less for their grain.

"As a result of the disparity in rates (between trucks and railroads) a lot of wheat is going around the elevators," testified C. B. Steward, chairman of the Nebraska Farm Bureau Federation's legislative and transportation com'te.

Glenn Morris, Sterling, whose company operates 11 grain elevators, admitted that if present rail rates continue, his company might find it necessary to buy trucks for hauling grain, in order to defend its business.

The Colorado Farmers Educational & Co-operative Union was reported planning trucking service to carry members' grain to terminal markets and return with farm machinery, paints, salt, groceries, tires, flour, fence, and other farm needs.

Six Nebraska ports of entry show increases in the truck movement of grain, testified John A. Kuhn, traffic manager for the Omaha Grain Exchange, arguing that rail rates on grain are out of line with comparative rates for livestock and hay.

W. R. Scott, transportation commissioner for the Kansas City Board of Trade, contended equalizing rates should be made from the territories involved to Kansas City to maintain the relationship between the Omaha and Kansas City markets.

Halsey McGovern, transportation specialist for the department of agriculture, proposed a 16% reduction in rail rates on grain to Omaha, a comparable reduction to Kansas City, and St. Joseph, the rates to start at 21c per cwt. from Barton, Neb., to Omaha, and advance half a cent for each 15 miles west from Barton.

The hearing resulted from the demands for lower freight rates made by the Nebraska-Colorado Grain Producers Ass'n, in which many country grain shippers hold membership. The territory involved extends as far west as Cheyenne, Wyo., and Trinidad, Colo.

Violation of Federal Trade Commission "cease and desist" orders has led to collection by the Department of Justice of \$9,000 in penalties from the Holst Publishing Co., Boone, Ia.; the Purity Products Co., Chicago, and the K. & S. Sales Co., Chicago.

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Feedstuffs

Atlanta, Ga.—Feed manufacturers will meet the evening of Apr. 24 to form a state organization, after the annual conference Apr. 23, 24 of the Southern Feed Control Officials Ass'n.

Washington, D. C.—Alfalfa meal production in February amounting to 10,000 tons, bringing the total, since last June to 223,000 tons, compared with 17,000 and 229,000 tons, respectively, a year ago, reports the U. S. D. A.

Production of brewers dried grains during February totaled 6,700 tons, for the 8 months ending February, 65,200 tons, compared with 7,400 and 63,400 tons, respectively, during the same periods a year ago, reports the U. S. D. A.

Trenton, N. J.—H. B. No. A-350, by Wickham provides for collection of a fee of \$5 for filing assignments of rights in labels, trade-marks and designs. This bill affords no protection to those interested and is merely an attempt to tax industry.

Washington, D. C.—Distillers dried grains production during February amounted to 14,500 tons, during the 8 months ended February, 98,900 tons, compared with 11,000 and 97,100 tons, respectively, in the same periods a year ago, reports the U. S. D. A.

Sioux City, Ia.—W. S. Lorenz is reported to have pleaded guilty to another charge by the Iowa department of agriculture of misbranding. Involved was mineralized meat scrap, under the brand name of Western Mills, with 30% protein claimed and about 17% found.

Minneapolis, Minn.—Transportation occupied the attention of the regular bi-monthly meeting of the Northwest Feed Manufacturers & Distributors Ass'n on Mar. 12. Emphasized was the need for cooperation between the feed industry and the railroads to increase the business of each.

State College, Pa.—A dinner party in honor of Professor B. W. Dedrick, on his 80th birthday anniversary Mar. 27 will be given at the Nittany Lion. Congratulatory messages addressed there will be read at the dinner. Prof. Dedrick established and directed for more than 25 years the course in milling at the Pennsylvania State College.

Washington, D. C.—The National Labor Relations Board has ordered for Apr. 4, a new hearing for differences between the Ralston-Purina Co. and the Flour, Feed & Cereal Workers Union. A trial examiner ordered disbanding of the Purina Labor Organization last fall. The A. F. L. affiliate accuses the company of "unfair labor practices."—G. E. T.

Guelph, Ont.—Toronto Section, American Ass'n of Cereal Chemists, will meet at the Ontario Agricultural College, Mar. 30, to hear Dr. H. D. Branion speak on "The Variation in Vitamin A Potency of Yellow Corn"; Prof. E. S. Snyder on "Some Factors Influencing Egg Quality"; J. M. Appleton, in an illustrated talk on "Changes in Mineral Content and Other Factors in Young Cereal Grasses at Different Stages of Growth."

Peoria, Ill.—Allied Mills, Inc., has appointed as assistant director of its biological research division, Walter J. Rudy, who is a graduate of the Department of Agricultural and Biological Chemistry, Pennsylvania State College. Mr. Rudy was in charge of research on nutrient requirements of adult stock at the poultry nutrition division of the

national agricultural research center, Beltsville, Md., when he resigned to go with Allied Mills.

Why Corn Needs a Supplement

A study by Frank A. Csonka, of the U.S. D.A., shows definitely that none of the indispensable amino acids considered herein are missing from the whole corn flour and that they are equally distributed in white and yellow corn. The amino acid composition of the whole corn kernel as found and as described in this paper when compared with that of casein shows that tryptophane and lysine are present at a lower level.

The deficiency of tryptophane and lysine, which are absent in zein, apparently is not corrected sufficiently by the rest of the corn proteins. This conclusion, based on analytical findings, supports the general feeding practice of supplementation.

Evaluating Feeds

By PHILIP H. SMITH, Massachusetts Agri. Exp. Sta.

If we are truly to evaluate a feed, more should be known than its content of crude protein, fat, and fiber. Protein is a complex substance whose general make-up depends upon the source from which it is derived. When certain amino acids, which go to make up the protein molecule, are lacking, the feed in which the protein is found will not fulfill its function as a component of a well-balanced ration.

Fat as ordinarily determined contains chlorophyll (the green coloring matter of growing plants) and waxes, in addition to true fat or oil. These cannot all be considered as of equal food value. Fiber is a general term including all cellulose-like constituents. If the fiber present is true cellulose it is of considerable food value. Where the fiber contains an excessive amount of lignin it is less valuable. Thought should be given to the kind of mineral elements which a feed contains.

The ash or mineral part of a feed as ordinarily determined may consist almost entirely of silica, or it may contain appreciable amounts of the more valuable elements, such as phosphorus and calcium. Research has also developed the fact that the complete absence of certain elements ordinarily present in minute quantities will give rise to functional disorders. Manganese in poultry feeds, the lack of which may cause slipped tendons in chicks, is an example.

Two physical factors which have an effect upon a feed are length of storage and heat. Alfalfa hay improperly stored loses much of its vitamin A potency. There is a certain danger in over-heating fish and meat by-products in drying, while soybean meal is apparently benefited by some heat during or after the extraction process.

Provision should be made in the statute for guaranties other than protein, fat and fiber, where such guaranties would be essential in fixing the value of a feed. The value of molasses lies in its sugar content; the protein and fat content are negligible. A sugar and water guaranty would fully indicate the quality of molasses. The various fish oils used entirely for their vitamin content should carry a guaranty of vitamin potency.

It is at least debatable whether the present feed law should not be revised so as to be more flexible in its operation and cover points not included in the present act.

Mississippi Bars Feed Filler

Delinted hulls and sugar cane bagasse, as commercial feed materials, is barred by feed control officials of Mississippi, reports the Southern Mixed Feed Manufacturers Ass'n.

Prohibition of these materials as a feed was withdrawn during the drouth years as an emergency measure. The effective date of the order will allow manufacturers a brief time to use up all or most of the tags they have on hand that include these commodities in the list of feed ingredients.

Stability of Vitamins in Mixed Feeds

Vitamin A from fortified cod liver oil, when mixed in the ration to provide respectively 100, 150, 200, and 300 units of vitamin A per 100 grams ration, did not evidence complete destruction even when the rations were stored in burlap bags at summer temperatures for 25 weeks, although it underwent progressive destruction as the storage period advanced.

One hundred and fifty units of vitamin A from fortified cod liver oil when incorporated per 100 grams of ration *fresh weekly* provided sufficient vitamin A to meet chicks' requirements, but 200 units per 100 grams ration fed after a storage period of eight weeks did not meet chicks' requirements for this factor.

When 300 units of vitamin A from fortified cod liver oil was incorporated per 100 grams ration and the ration stored for 21 weeks at summer temperatures, it provided sufficient vitamin A for practically normal growth and prevented outward symptoms of vitamin A deficiency in chicks to eight weeks of age, though the amount of urates in the kidneys increased at and after 12 weeks' storage.—Baird, Ringrose and MacMillan in Poultry Science.

Vitamin E Prevents Dystrophy

Shimotori, Emmerson and Evans at the University of California spent a year in demonstrating that the administration of 0.75 cc or even 0.5 cc of wheat germ oil daily to guinea pigs on this diet prevented the development of dystrophies up to the 355th day of life, when the experiment was discontinued. The muscle creatine values in these animals were normal. The controls (without wheat germ oil) all developed typical early dystrophies and in each case were sacrificed when practically moribund at times varying from the end of the first to the end of the third month.

These encouraging results with wheat germ oil led to a repetition of the experiment employing the pure substance, alpha tocopherol, instead of wheat germ oil. In the midst of this work several important papers appeared reporting the employment of alpha tocopherol. Barrie, as well as Goettsch and Ritzman, have shown that alpha tocopherol prevents the development of muscular dystrophy in suckling rats from mothers reared and held on low E—facts which we can confirm. Mackenzie and McCullum have also reported that alpha tocopherol cures the dystrophy which develops in rabbits maintained on the Goettsch and Pappenheimer diet, supplemented with 10 per cent ether extracted wheat germ.

Since Cummings and Mattill have shown that oxidative reactions initiated by the auto-oxidation of cod liver oil are destructive to vitamin E, we fed the cod liver oil (1 cc per os) and alpha tocopherol (3 mg per os) on alternate days. These guinea pigs likewise remained free of evidence of muscular dystrophy and now have been sacrificed on the 200th day of life, showing normal values for muscle creatine.

It is therefore apparent that in another animal form and with a particular dietary regimen in which an early severe dystrophy of the striated musculature invariably appears, alpha tocopherol acts effectively to prevent the dystrophy.

Oat Feeds

By PHILIP H. SMITH, Massachusetts Agri. Exp. Sta.

During the year ending Sept. 1, 1939, attention has been paid to oat products.

While federal grades for whole oats may be of value in the grain markets, they lend considerable confusion to the evaluating of ground oat products. Under the standards oats may contain as low as 80 per cent of sound cultivated oats. Feed oats and mixed feed oats may contain as little as 30 per cent. The propriety of designating a mixture containing less than 50 per cent of oats as oats, even with a qualifying term, can be seriously questioned.

In some instances oats of any grade when ground are designated as pure ground oats. Feeding oatmeal, supposedly a pure ground oat groat, has been found not only as a pure product but also made from a No. 4 oat which may contain as little as 80 per cent of oats. There has also been found quite generally distributed a so-called feeding oatmeal which contained not only a liberal amount of barley but rice and tapioca waste as well. In the latter instance thru the co-operation of the U. S. Food and Drug Administration several carloads were placed under seizure and the shipper prosecuted in the federal courts.

An Arizona Feed Testing Farm

For more than six years, formulas and feeds have been constantly tested at the Arizona Flour Mills research farm, four miles north of Tucson, Ariz., on the Casa Grande highway. Thousands of chickens and turkeys have been used to determine the best ingredients, and the best combination of ingredients to use in ready mixed feeds.

The program at the farm is directed by Albert Lent, a graduate of the Pennsylvania state university and direct management is in charge of Irvin Gee, a well known graduate of the poultry department of the University of Arizona, who later did post graduate work at the same institution.

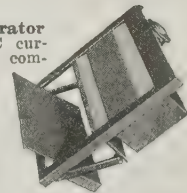
The purpose of the farm is not original research, but rather the application of principles of nutrition after they have been thoroughly proved valuable and practical.

The variance of alfalfa meals, determined by biological testing, resulted in the forming of a new industry in Arizona, the dehydra-

tion plant of the Arizona Flour Mills, at Casa Grande, Ariz. From this plant choice dehydrated meal has been shipped to many sections of the United States. The rapid growth of the alfalfa in the irrigated sections results in high vitamin A and vitamin G values in Arizona alfalfa meal.

Much turkey work has been done at the Arizona Flour Mills experimental farm during the last few years. Commercial turkey rations have been formulated and tested that are more efficient in producing a pound of turkey. Feeds have been developed that reduce the cost of a pound of live turkey as much as three cents per pound because of greater efficiency of the ration and less feed required per pound of turkey.

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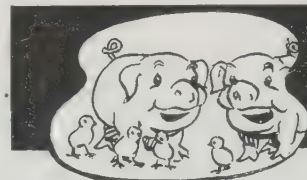
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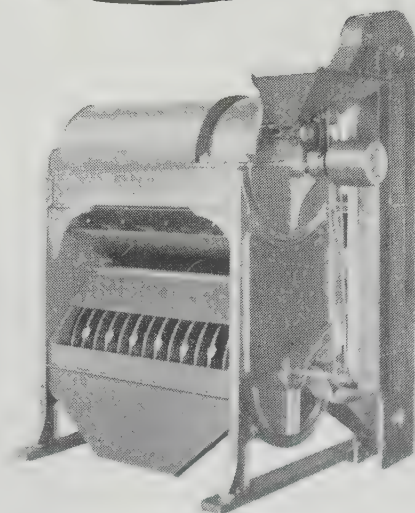
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Poultry Feeds and Feeding

Manganese for Slipped Tendon

By RAY EWING

Work at various state colleges, notably Cornell university and Pennsylvania State college, has shown that manganese has proven successful in the prevention of perosis, particularly when the calcium-phosphorus ratio is approximately correct.

Fifty parts per million of manganese would seem to be about the correct amount in the ration. One-quarter of a pound (4 ounces) of a technical grade of manganese sulphate per ton of mash will raise the content well above the marginal level. It will be necessary to premix this amount with some other ingredient in order to obtain uniform distribution in the completed mash.

Many feed manufacturers are making manganese sulphate in the above proportion a standard ingredient in their various poultry mashes, particularly in chick mashes where the chicks are raised in batteries or in strict confinement, and also in breeder mashes.

Soybean Oil Meal and Egg Hatchability

Christiansen, Halpin and Hart of the University of Wisconsin have found that the addition of small amounts of a protein supplement, crude casein, did not significantly increase the hatchability of eggs over that of the group receiving soybean oil meal as the sole supplement.

Consistent improvement was shown in the hatchability of eggs when the flavin bearing supplements, yeast, dried whey, or dried skim-milk, were added to these rations. The factor supplied by yeast was not heat labile.

Evidence that the factor supplied by these materials is flavin is shown by hatchability results from groups receiving synthetic d-riboflavin.

The lower average percentage of hatchability of eggs laid by the group receiving the single supplement of soybean oil meal is mainly due to severe fall in hatchability during the winter months.

This "winter slump" in hatchability was completely eliminated by the addition of manganese or flavin.

Vitamin D Requirement of Young Turkeys

The investigation was made by measurement of the ash content of the turkey tibiae at four weeks of age as influenced by various levels of vitamin D in the diet, as reported by T. H. Jukes and T. D. Sanford, in the Journal of Nutrition. The highest bone ash was around 50%. U. S. P. reference cod liver oil produced unsatisfactory growth and calcification when added at a level of 120 units (U. S. P.) per 100 g. of diet.

A linear relationship between vitamin D level and bone ash was observed in an experiment in which reference cod liver oil was added at levels ranging from 20 to 100 units per 100 g. of diet. Growth rate of turkeys was markedly influenced by vitamin D.

Satisfactory growth and calcification in complete absence of sunlight were produced when turkeys received 0.4 g. of a fish oil blend per 100 g. of diet. The oil was tested with chicks and was found to supply approximately 450 units of vitamin D per g. when the turkey basal diet was used, based on a value of 95 units of vitamin D per g. for U. S. P. reference cod liver oil.

The fish oil blend functioned as a source of vitamin D that was more effective, chick unit for chick unit, than reference cod liver oil for

turkey poults. A value of 200 A. O. A. C. chick units of vitamin D per 100 g. of diet may be taken as an approximation of the requirement of turkeys for the first four weeks to produce maximal calcification in the complete absence of sunlight.

Vitamin E Deficiency and Brain Disease

After 8 years of experimentation since their discovery in 1930 of a brain disease of chicks, Alvin M. Pappenheimer and Marianne Goettsch, with Erwin Jungherr, have given the results in Bulletin 229 of the Connecticut Experiment Station at Storrs, Conn. Their findings are summarized as follows:

A synthetic diet containing all the factors known to be necessary for normal rat nutrition except vitamin E, produces in young chicks a severe disorder of the brain. The term nutritional encephalomalacia is proposed for this previously unrecognized disease.

The essential pathological change is an ischemic necrosis of cerebellum, cerebrum, mid-brain, or medulla. Optic lobes, spinal cord, and peripheral nerves are not affected. No constant visceral lesions have been noted.

The disease is not transmissible by inoculation and there are no reasons for regarding it as infectious in origin.

It is not accompanied by changes in blood volume or cell plasma ratio.

Acute lesions are associated with increased moisture content of the affected brain tissue.

The disease occurs during the period of active brain growth.

A protective factor is present in various vegetable oils, and has been concentrated from soybean oil by extraction with 95 per cent alcohol.

The protective factor in the natural oil resists autoclaving and aeration.

It is present in the non-saponifiable fraction, if due precaution is taken against oxidation during saponification and proper solvents are used for extraction. The fatty acid and water-soluble fractions are inert.

The active fraction can be further concentrated by the removal of sterols by freezing and precipitation with digitonin.

Preliminary experiments indicate that the chicks are protected by α -tocopherol (vitamin E) from vegetable oils, and by synthetic dl- α -tocopherol acetate.

Ducks do not develop nutritional encephalomalacia upon the same diet, but there is pro-

duced wide-spread degeneration of the skeletal muscles. It is not known whether the duck disease is due to the same factors that induce encephalomalacia, but there are indications that vegetable oil contains a protective factor against the duck disease.

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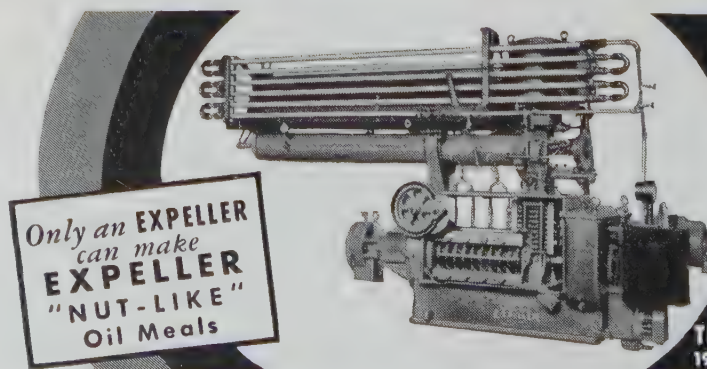
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In turkeys, the same diet brings about a selective necrosis of the smooth muscle of the gizzard.

Diseases having identical symptoms and pathology occur in chicks, ducklings, and turkeys under field conditions.

Vitamin A Requirements of Growing Chicks

Over a 6-year period the New Hampshire Agricultural Experiment Station studied the effect of different amounts of cod liver oil for growing chicks at various ages, the effect of changing very young chicks from an adequate ration to one deficient in vitamin A, the relative value of the New England College Conference ration with and without cod liver oil, the vitamin A potency of sardine oil and the relative efficiency of sardine and cod liver oils, and the optimum amount of vitamin A for growing chicks up to six weeks of age.

The requirement for vitamin A for rapid growth and normal storage was relatively high, about 135 I.U. per 100 g. of food during the first five weeks, subsequently increasing to about 400 I.U.

When chicks were changed from an adequate to a deficient diet at four or eight weeks of age, the stored vitamin A did not suffice for more than two weeks of deprivation. Kidney injury and the presence of urinary crystals in the faeces and scrapings from the large intestine accompanied the deficiency.

With increased vitamin A intake there was also increased food consumption, but too much cod liver oil tended to decrease the survival rate of the chicks. Addition of $\frac{1}{2}$ or 1 per cent of cod liver oil or sardine oil to a vitamin A deficient diet prevented the occurrence of symptoms of deficiency, cod liver oil promoting somewhat more rapid growth.

A vitamin A intake greater than that supplied by 1 per cent of good cod liver oil was not warranted. The New England college Conference ration contained enough vitamin A to prevent ophthalmia and support normal growth.

Liberal Amounts of Protein Necessary for Chicks

By ROSS M. SHERWOOD, Chief Division of Poultry Husbandry, A. & M. College of Texas

At the Experiment Station we weighed four pens of experimental chicks. All chicks were just eight weeks old, all were of like breeding and in so far as is known, the only difference was that the chicks in the different pens received different feeds. One lot received a ration containing 14% protein, another lot received the same feeds but in such proportions that they received 16% protein, another received 18% protein and the fourth pen received the same feeds but they were mixed in such proportions that the ration contained 20% protein. At eight weeks of age the chicks receiving the 14% protein weighed 424 grams, those receiving 16% protein weighed 602 grams, those being fed the feed with 18% protein weighed 683 grams, and those receiving the 20% of protein weighed 742 grams each. You will remember that a pound is equivalent to about 450 grams. In this experiment the birds in the 20% protein group weighed 318 grams more or about 75% more than those getting only 14% protein. Those getting 18% protein weighed 259 grams more or about 61% more than those getting 14% protein. Those getting 16% protein weighed 178 grams more or about 42% more than those receiving the 14% protein.

In some experiments conducted last year on this same problem, the results were similar. The weights of the chickens at ten weeks of age receiving 14, 16, 18 and 20 per cent protein were 404, 662, 788 and 803 grams each respectively. In this case the chicks getting the 20% protein weighed 399 grams more or about 99% more or practically double what those receiving 14% protein weighed. Those

being fed 18% protein weighed 384 grams more or about 95% more than those getting only 14% protein while those getting 16% protein weighed 258 grams more or about 64% more than those receiving 14% protein. These figures for the two years are very convincing. A careful study of these results has proven definitely that it is economical to see that the chicks receive a feed containing as much as 18% protein. The 20% protein gave somewhat better results than the 18% protein, but due to the cost of protein feeds, this higher level may not be economical.

The concentrated protein feeds used in this study were sardine meal, cottonseed meal and soybean oil meal used in equal parts. In the 18% protein ration there was about five pounds of each of these feeds. The other ingredients in this experimental ration were wheat gray shorts, 20 pounds; pulverized oats, 10 pounds; dehydrated alfalfa leaf meal, 5 pounds; bone meal, $1\frac{1}{2}$ pounds; oyster shell, 2 pounds; salt, 1 pound, and good grain, $45\frac{1}{2}$ pounds. (Since the chicks are grown away from sunlight, one eighth of 1% of high grade fish oil was also used.)

The results of these experiments are in line with those of other experiment stations. Many commercial feed manufacturers are using as much as 18% protein in their chick starting rations.

At the Texas Station we are now experimenting to determine how long chicks require these liberal amounts of protein for best results. This study will require several years; no definite results are available at this time.

Union Pacific Asks to Cut Wheat Rates

Oregon officials of the Union Pacific railroad have received authority to ask the state public utilities commission to allow a reduction in the carload rates on wheat from its Columbia river lines.

The cuts, say H. E. Lounsbury, of the Union Pacific, will amount to 3c per cwt. on the Shaniko branch, 2c per cwt. on the Condon and Heppner branches, and relative reductions from main line points east of The Dalles, to and including Heppner Junction, for wheat moving to Portland and Vancouver.

Building of facilities along the Columbia river banks for loading barges is reported progressing at a rapid rate, and barges available to carry grain are increasing in number.

Canadian merchant and custom mills ground 5,723,460 bus. of wheat during January, compared with 4,976,225 bus. during the same month in 1939.—Dominion Bureau of Statistics.

Ohio soybean processing plants can process nearly twice the volume of soybeans produced in the state. The 1939 Ohio soybean crop was estimated at 6,500,000 bus., while the state's processing plants can crush 12,000,000 bus. annually.

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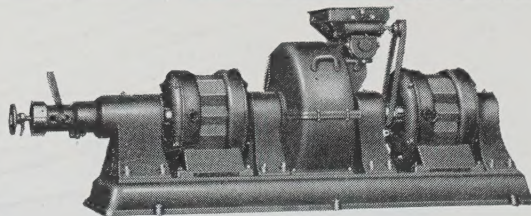
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Pacific Northwest Feed Men Hold Nutritional School

The Pacific Northwest Feed Ass'n, Inc., held its 12th annual convention at the New Washington Hotel in Seattle, Wash., with 300 feed dealers in attendance.

Informal discussions of poultry and livestock nutritional problems occupied the program for the first day. A nutritional school was operated. Speakers were Washington State College men, as follows:

J. S. Craver on "The Poultry Council of the State College of Washington"; W. D. Buchanan on "Poultry Pointers and County Agent Services"; C. F. McClary on "Vitamin Deficiencies"; C. E. Sawyer on "Lower Chick and Poultry Mortality"; E. I. Robertson on "Talking Turkey"; J. S. Carver on "Milk in Poultry Feed"; G. E. Bearse on "How Can We Improve Hatchability by Feeding?"

George Wisting, Portland, Ore., was the principal speaker the second day, with analysis of the potential effect of the Coulee and Bonneville power dams on the economic development of the Pacific Northwest. Other speakers included: retiring president Ralph Johnstone, with his annual address; John Lehmann, Everett, Wash., on itinerant truck competition; Ed Williams, Seattle, on the "Feed Dealer and his Telephone"; M. C. Midgley, State College, with a description of feed sampling and analytical work.

Election of officers placed for the ensuing year, C. O. Lande, Renton, president; Charles Vaughan, Port Orchard, vice president; Lorin Markham, Yakima, sec'y-treasurer, and John G. Wilson, Seattle, manager, all from Washington.

The convention was climaxed with an annual banquet at which Art Campbell, Longview, Wash., was toastmaster, and was entertained with a vaudeville show that drew many rounds of applause from the 300 guests.

Subsidy on wheat from the Pacific Coast to Europe has been resumed by the AAA. On sales made Mar. 13 the payment was 22¢ per bushel.

Feed Prices

The following table shows the closing bid price each week for May futures of standard bran and gray shorts, spot cottonseed meal and No. 1 fine ground alfalfa meal, in dollars per ton, and No. 2 yellow corn and No. 2 yellow soy beans in cents per bushel:

	Minneapolis Spot		Kansas City	
	Bran	Midds	Bran	Shorts
Jan. 13.....	21.00	21.00	18.85	22.80
Jan. 20.....	21.00	21.00	18.75	22.75
Jan. 27.....	21.00	20.50	18.25	22.40
Feb. 3.....	20.50	19.50	17.90	21.60
Feb. 10.....	20.75	20.25	17.95	22.20
Feb. 17.....	21.50	21.50	18.75	22.70
Feb. 24.....	22.50	21.50	18.50	22.40
Mar. 2.....	21.50	20.75	18.10	22.25
Mar. 9.....	22.50	21.50	18.50	22.35
Mar. 16.....	23.00	21.50	18.20	22.10
Mar. 23.....	23.00	22.00	18.45	22.50

	*St. Louis		Chicago	
	Bran	Shorts	Soybeans	Meal
Jan. 13.....	21.65	24.50	117	34.20
Jan. 20.....	21.80	24.25	112½	31.50
Jan. 27.....	21.40	24.25	108½	31.20
Feb. 3.....	21.00	23.65	104¾	31.20
Feb. 10.....	21.10	24.50	106¾	29.20
Feb. 17.....	21.50	24.85	108	29.20
Feb. 24.....	21.40	24.40	110½	29.20
Mar. 2.....	21.25	24.25	113¾	29.20
Mar. 9.....	21.50	24.40	118½	31.20
Mar. 16.....	21.20	24.00	111½	29.20
Mar. 23.....	21.45	24.50	112	29.20

	Cottonseed Meal		Kansas City		Chicago Corn
	Ft. Worth	Memphis	Alfalfa		
Jan. 13.....	37.00	30.50	23.50		59
Jan. 20.....	37.00	30.50	23.25		60
Jan. 27.....	37.00	30.00	23.50		59
Feb. 3.....	37.00	30.00	23.50		57
Feb. 10.....	37.00	29.00	23.50	58½	
Feb. 17.....	37.00	29.50	23.50	58	
Feb. 24.....	37.00	30.25	23.50	58¾	
Mar. 2.....	37.00	30.50	23.50	58½	
Mar. 9.....	37.00	30.50	23.25	58¾	
Mar. 10.....	37.00	28.90	23.25	57¾	
Mar. 23.....	37.00	30.20	23.25	59	

*St. Louis bran, basis Chicago delivery, shorts St. Louis delivery.

Books Received

HIGHWAY BARRIERS titles a 72 page, staple-bound book published by the American Trucking Ass'n, Inc., Washington, D. C., which lashes out vigorously at the barriers to interstate commerce that are set up by conflicting state laws governing truck transportation of goods and commodities. It points out that the federal constitution provides for free trade between states, that discriminatory trade barriers on interstate commerce may force enactment by Congress of broad anti-barrier legislation. In appendixes are given the highlights of motor carrier reciprocity prevailing among the 48 states; truck weight restrictions in each state; mileage, gross receipts and other truck taxes in each state; ports of entry laws, and other regulations of states that affect interstate motor carriers. A valuable book for the man whose trucks cross state lines. Available on request to the publishers.

TURKEY MANAGEMENT is the first full-sized book to be published on the single subject of turkey production, its 16 chapters covering the complete range of interest, 153 pages being devoted to "Feeds and Feeding," among other chapter titles being "Breeding Principles and Practice," "Natural Incubation and Brooding," "Artificial Incubation," "Disease Prevention and Sanitation," "Marketing, Selection and Grades," "Turkey Shows and Showing." The authors have translated the results of research into terms that will be of value to the turkey raiser. The chapter on feeds tells of wet mash feeding, pellet feeding, liquid milk feeding, feeding for free range, prepared and home mixed feeds, recommended starting diets, growing diets, finishing diets, wintering and laying diets, the feeding stuffs, nutrients and nutrient requirements, chemical composition and digestibility of feeds, planning and balancing diets, 25 formulas, with an appendix containing tables and collateral data. Anyone interested in the business of growing a small or a large number of turkeys will be fortunate to have this book at his elbow. It contains answers to most of his questions. The 700 pages of this book are profusely illustrated with 140 engravings. By Stanley J. Marsden, B.S., M.S., associate poultryman U. S. Dept. of Agriculture, and J. Holmes Martin, B.S., Ph.D., director regional poultry research laboratory for U. S. D. A., East Lansing, Mich., editor of "Poultry Science." Published by The Interstate, Danville, Ill. Cloth, \$3.50.

"Is Vitamin Fortification of Foods Justifiable?" is the topic of Dr. A. W. Homburger of the University of Louisville at the Mar. 30 meeting of the Cincinnati branch of the Ass'n of Cereal Chemists, in the French Village at Louisville, Ky.

Chicago, Ill.—Wheat futures trading worked up to the largest February volume in three years, the total going over 533,000,000 bus., nearly 4 times the volume in February, 1939. Corn futures trading dropped to 45,839,000 bus., the second smallest February volume in six years, and nearly 21,000,000 bus. below February, 1939.

Grasshoppers are a much less serious crop threat this year than in 1939, or 1938, according to Dr. Lee A. Strong, chief of the Bureau of Entomology, U.S.D.A. A grasshopper egg survey shows a marked decrease in hopper numbers and a shift in the areas of infestation away from sections where poison bait campaigns have reduced their numbers.

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Modern Feed Mill of Jacob Rubinoff Co. at Vineland, New Jersey

Vineland, New Jersey, with a population of about 8,000, located 35 miles south of Philadelphia, and within 35 miles of Atlantic City, is an intensified poultry center. This city is well situated to serve the large cities that bound it, such as Philadelphia, Camden and New York. The producers of poultry and eggs have a large market to cater to.

The Jacob Rubinoff Company has been manufacturing poultry feeds since 1906, in the city of Vineland. Both Jacob Rubinoff, his son Edward and two sons-in-law, give their personal attention to the management of this company, which for many years has served a long list of satisfied customers.

The Rubinoff Company decided to make improvements and additions to the buildings and equipment that they already had in operation at Vineland, and the T. E. Ibberson Co. was called in to help them design and plan their requirements, with the result that the T. E. Ibberson Co. was awarded the contract for a most modern plant. Mr. Otto Moe, associated with Ibbersons for 23 years, was in charge of construction.

The new facilities provide the owners with 49 storage and processing bins. Warehouse space provides ample storage capacity.

Twelve legs are located in the plant for the processing and handling of the various products. These legs are of the most modern type. Unloading shovels from cars direct to special Richardson automatic scales are a part of the receiving unit. Four Richardson automatic bagging scales for scratch as well as mashes, are used for weighing and measuring products. Three modern sewing machines will be in operation.

Special mash feed dressers, enabling the owners to put out the finest kind of a product, are in use.

Three corn cutters and three corn graders are installed. One of these graders, the largest that is manufactured, has been installed. A large receiving separator for processing grains to be made into feed, will be used.

One hammer mill and one attrition mill, specially provided with combination feeder and scalp, as well as a specially made feeder, were installed to serve the mills. A pneumatic system for handling feeds from the attrition mill is part of this equipment. A unique design in the way of providing hopper scales for

weighing products in bulk from processing bins to the processing machines, has been installed. Four large feed mixers will be in operation.

The whole plant is operated by electric power, approximately 300 H.P. being used. Individual units, all tex rope connected, giving each unit in the plant an individual drive, will be a part of this equipment. All motors are dust and explosion proof. A special fire proof room has been provided for all electric controls. The entire plant is being fitted for fire protection by a special modern sprinkler system, which is now being installed.

A thirty ton capacity outside scale, 34 feet long, is being installed. The beam is fitted with a weightograph. A full basement with spacious room extends under the elevator and mill building. All bins are of the overhead

Calculating Content of a Ration

When the several ingredients of a ration or grain mixture have been compounded into the finished product it is sometimes required to state on the tag or label the percentages of protein, fat or fiber.

The feed mixer knowing the content of each ingredient can calculate the percentage in the mixture by the following procedure, as reported by the Wisconsin Department of Agriculture in Bulletin No. 91.

In column 1 place the name of the ingredient, in column 2 the protein content of the ingredient in pounds per 100 lbs.; column 3 the weight of each ingredient stated in hundreds of pounds, the fourth column giving the product of columns two and three.

Column 1	2	3	4
Ground corn	10	×	40
Ground oats	12	×	72
Wheat bran	15	×	52.5
Gluten feed	23	×	80.5
Linseed oil meal	34	×	102
Sum	20		347.0

Then 347 divided by 20 = 17.35 = protein content of ration, which is therefor 17.35%.

Insert fat, fiber or ash content separately instead of the protein figures, and calculate exactly as for protein.

type and are fitted to work by gravity to the various processing machines.

The warehouse is fitted on one end to accommodate six trucks under cover at the same time, where trucks are served from a large loading platform inside the building.

The owners have provided a large office and scale room. This office is equipped with the most modern office equipment, and is air conditioned.

The Rubinoff Company operates eight of its own trucks and also operates a downtown store in Vineland where it retails a full line of poultry feeds and equipment. It also operates retail stores in the city of Clayton and Woodbury, N. J.

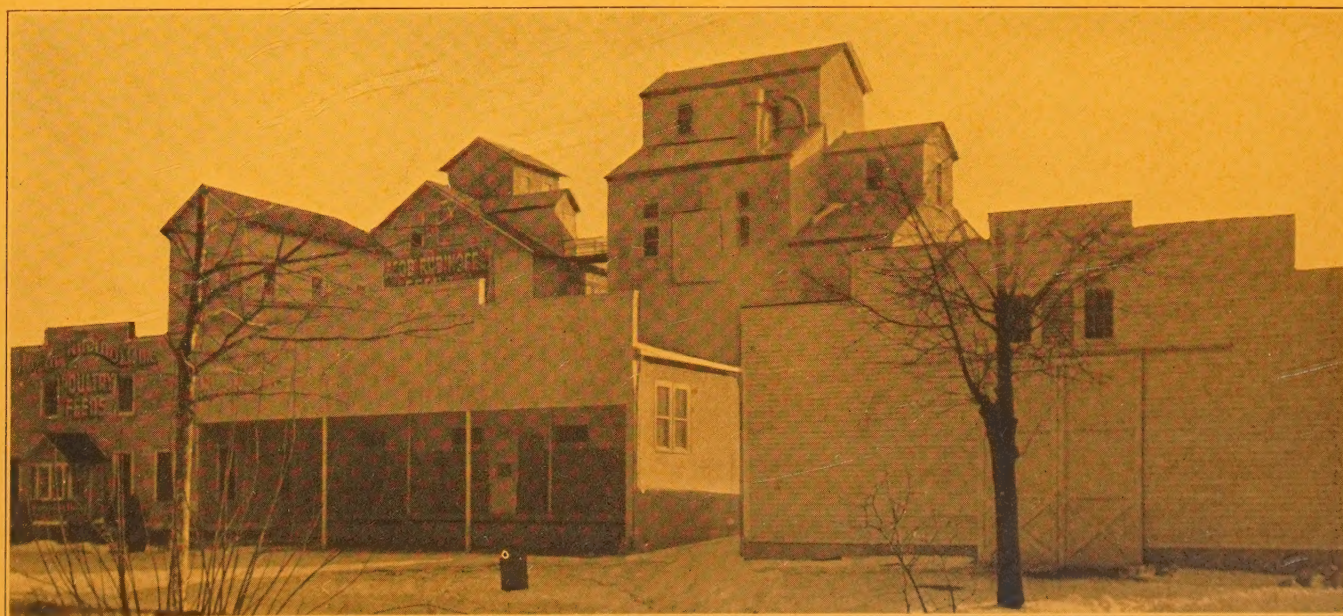
The Ibberson Co. has installed and equipped this new plant with many new features for processing of feeds. Specially designed Ibberson valves and fittings were used throughout the plant, and the Ibberson Co. now has this plant completed and in full operation.

Vineland citizens are to be congratulated on having a progressive company bring such a modern plant to their city. It will permit them to continue serving customers with high quality feeds at the lowest possible price.

More Feed Not Required in Cold Stable

J. R. Dice of the department of dairy husbandry of North Dakota Agricultural College reports that the idea that dairy cows receiving an adequate ration need to be kept in a warm barn to be comfortable seems to be an assumption rather than a fact.

Data presented show that provided dairy cows receive an adequate ration, have shelter from the wind, snow or rain and have a dry place to bed down that: (a) they can withstand exposure to cold temperature; (b) that they will produce practically the same in a cold stable as they will in a stable where the temperature is about 50° F.; (c) that milk cows on full feed, when housed in a cold stable produce sufficient surplus heat over usual maintenance requirements to maintain body temperatures without using nutrients for that purpose; (d) that cows housed in a cold shed require if anything somewhat less protein and total digestible nutrients for milk and butterfat production than other cows or the same cows when kept in a standard dairy barn; (e) that the cows in the cold shed tend to gain somewhat more body weight than the cows in the dairy barn; (f) that the comfort and convenience of the caretaker and the protection of watering systems rather than the need of the cows justify the use of stables that are common today.



Modern Feed Mill of Jacob Rubinoff Company at Vineland, N. J.



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An improperly designed piping layout with a cyclone dust collector was exhausting 16,000 C. F. M. Using the same fan and motor unit, a Day designed system with Dual-Clone Collector exhausted 30,000 C. F. M.—an increase in efficiency of 87½ per cent.

Exhaust Fans have maximum efficiencies of from 48 per cent to 70 per cent. Unless correctly applied, fan efficiencies may be much less than their rated maximums.

A Day representative can often correct faulty fan installations, and increase operating effectiveness.

Poor dust control, insufficient aspiration, and high operating costs of systems are commonly joint offenses resulting from errors in design and installation.



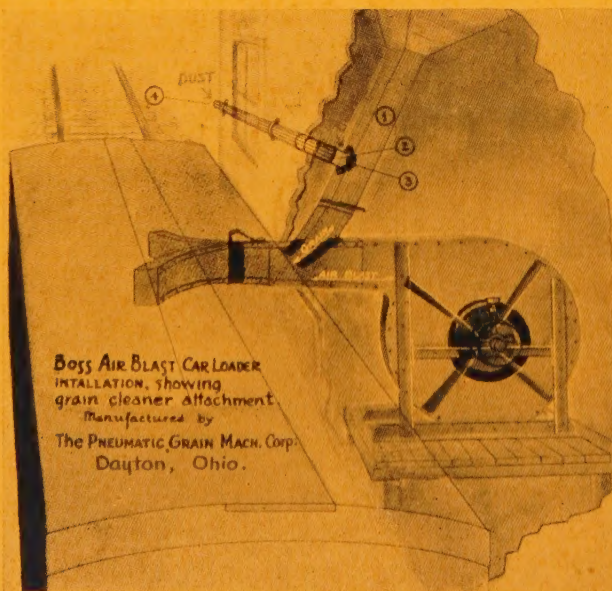
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